

ELECTRIC
ENGINEERING AND SUPPLY
COMPANY

MANUFACTURERS OF

Electric Light and Railway Supplies

FOR ALL SYSTEMS

SYRACUSE, N. Y.

DETROIT
WINN & HAMMOND

1892

REPAIRING.

DYNAMOS, MOTORS AND LAMPS FOR
ALL SYSTEMS REPAIRED. BROKEN AND
INJURED PARTS REPLACED. ARC, INCAN-
DESCENT AND RAILWAY ARMATURES OF
ALL SYSTEMS RE-WOUND.

Quick Time and Low Prices.

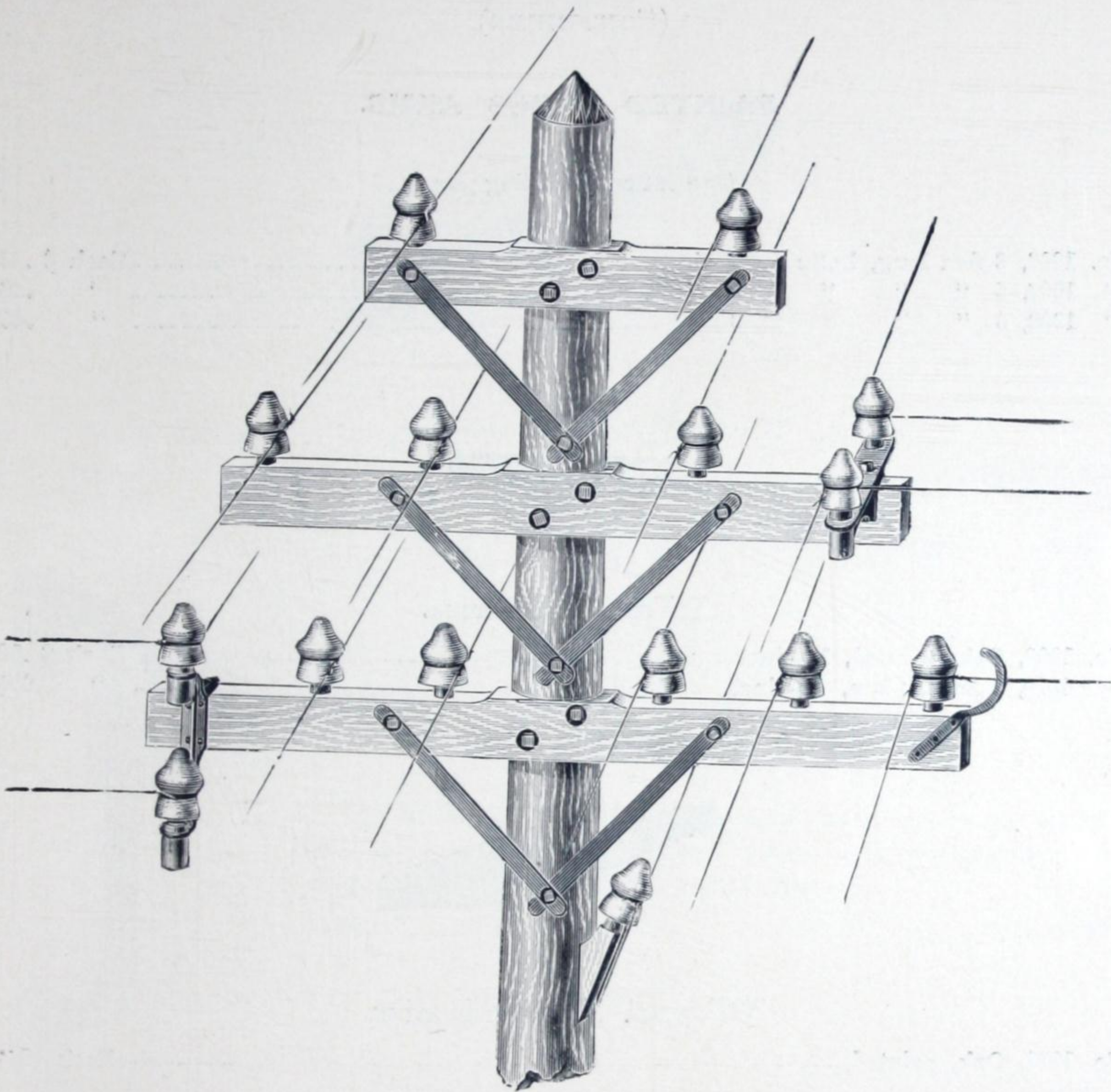
TO PURCHASERS OF SUPPLIES.

1. To insure ourselves and to avoid delay, cash or satisfactory references must accompany the first order. No small orders sent C. O. D.
2. C. O. D. orders from unknown persons must be accompanied by sufficient amount to pay transportation charges both ways.
3. Accounts are payable in 30 days from date of invoice. Monthly accounts on the 15th of each following month. If above regulations are not observed, bills and accounts will be subject to sight draft without notice.
4. Accounts payable in New York Funds, Postal Note, Money Order, Registered Letter, or Express Money Order.
5. Goods ordered forwarded by mail, are at purchaser's risk and expense. If registered we will charge also for registration. State route by which goods are to be shipped where there is a preference, and in all cases whether by Express or Freight.
6. Casing and Cartage at cost.
7. Great care is taken in packing goods, and receipts are obtained for all goods forwarded "in good condition." For any damage occurring in transportation make prompt claim on Railroad or Express Companies and notify us at once explaining nature of damage and amount of claim made. We will not hold ourselves responsible for breakage or loss in transportation.
8. Use Catalogue number in ordering.
9. In ordering wire state number and gauge. If gauge is not mentioned we will understand that Brown and Sharpe's American gauge is intended.
10. Allowance claims must be promptly made upon receipt of goods.
11. All prices subject to change without notice.



JEFFERSON STREET FACTORY AND OFFICES.


Line Material.



Above is shown a pole with the various trimmings used in line construction.

Electric Light Poles.

Length Feet.	Size Tops Inches.	Average Weight. lbs.	No. Poles for a Full Load.	Length Feet.	Size Toppe Inches.	Average Weight. lbs.	No. Poles for a Full Load.
25	6	250	100	40	7	600	70 (2 cars)
30	6	300	85	45	7	700	50 "
30	7	375	75	50	7	800	40 "
34	6	360	65	55	7	900	30 "
35	6	375	85 (2 cars)	60	7	1000	26 "
35	7	500	75 "				

 Prices on Application, Including Delivery at Any Railroad Station.

Line Material.

(CONTINUED).

PAINTED CROSS ARMS.

(See cut on preceding page).

No. 1906, 3 feet long, holes for 2 pins, -----	Each \$.22
" 1907, 5 " " " " 4 " -----	" .38
" 1908, 6 " " " " 6 " -----	" .46



Wood Pins.

No. 1909, Oak, painted, 1½ inch, -----	Each \$.02
" 1910, Locust, plain, 1½ inch, -----	" .02½



Wood Brackets.

No. 1911, Oak, painted, -----	Each 02½
-------------------------------	----------

Cross Arm Brace.

(Cut on preceding page).

No. 1953, Iron, -----	Each \$.15
-----------------------	-------------

Guard Arms.

(Cut on preceding page).

These are placed on the cross-arm where the wire makes a sharp bend or angle, and guard against the wire falling into the street in case the insulator breaks.

No. 1962, Iron, -----	Each \$.15
-----------------------	-------------

Line Material.

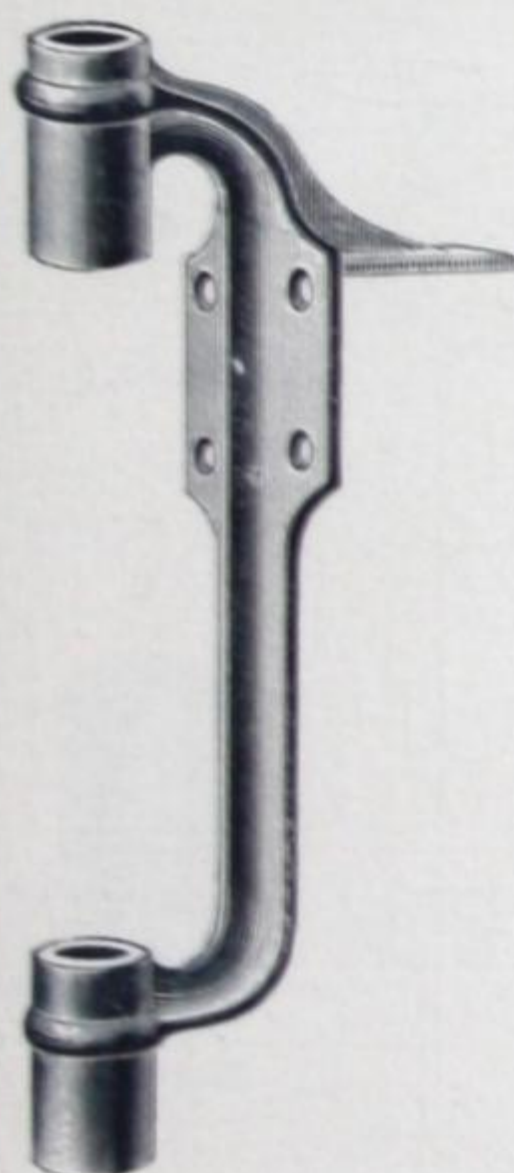
(CONTINUED.)



No. 1950.

Break Arm.

Price, ----- Each \$.75



No. 1951.

Spreader Bracket.

An attachment for pole lines, used on cross-arms for the taking off of loops for service wires, branch mains, or to converters, can be used to the right, left, or at the end of cross-arms.

Price, ----- Each \$.50



No. 1952.

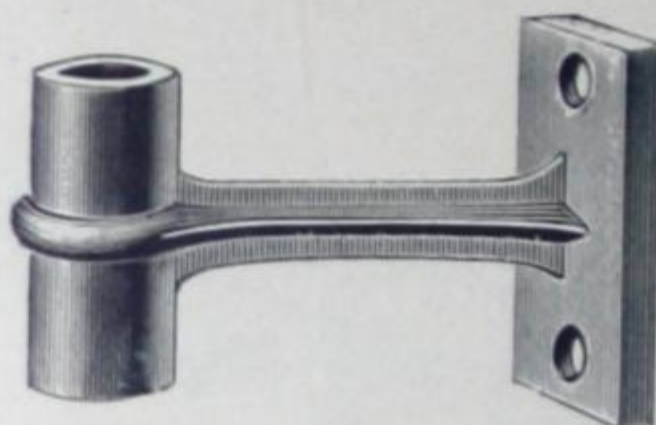
Circuit Loop Break.

FOR CUTTING IN A LOOP AT ANY PART OF THE CIRCUIT.

Price, ----- Each \$.50

Line Material.

(CONTINUED.)

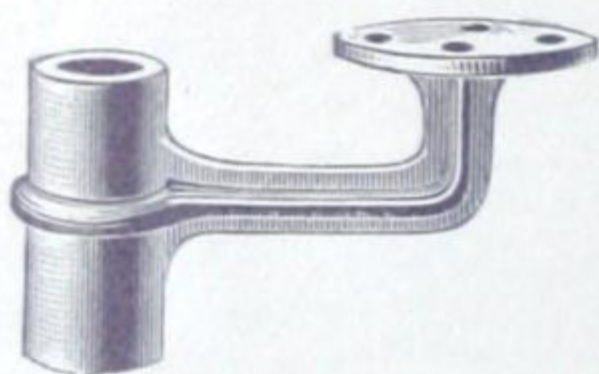


No. 1954.

Wall Bracket.

A useful Bracket for any wall. Wires are lead from the Spreader Bracket to these Wall Brackets and thence to the window, converter, or place to be supplied.

Price, ----- Each \$.30



No. 1955.

Cornice or Roof Bracket.

Used on buildings having protruding cornices. Can be attached to any wall.

Price, ----- Each \$.30

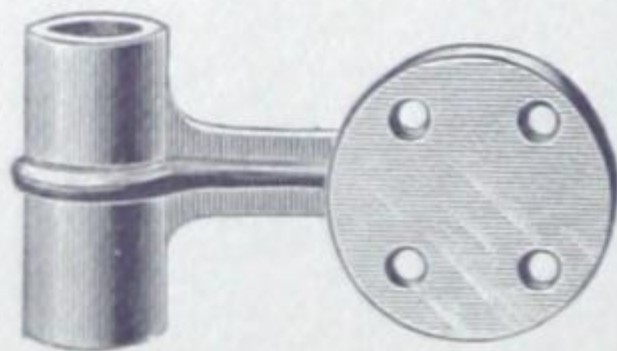
Roof Bracket.

STRAIGHT.

Price, ----- Each, \$.25



No. 1956.



No. 1959.

Lateral Bracket.

Can be used to run wires from corner to corner of buildings. Used either right and left hand, and can be fastened to any wall.

Price, ----- Each \$.30

A great point with these specialties is that the Pins and Insulators can be placed either upwards or downwards, and so a single bracket can be used in several positions.

Construction Tools.

(CONTINUED.)



No. 01820.

Pike Poles.

Length, Feet,-----	12	14	16	20
Price, Each,-----	\$1.45	1.60	1.75	2.15



No. 01860.

Pole Supporter--"Mule" Pattern.

Length, Feet,-----	4½	6	7½
Price, Each,-----	\$5.35	5.80	6.25

Heavy "Dead Man" Pike.

No. 01858. Length, 8 feet,-----\$2.50

Take-Up Reels.

No. 0619.	To take 12 in. Coil,-----	\$14.50
" 0620.	" " 18 " "-----	15.60

Come Alongs.

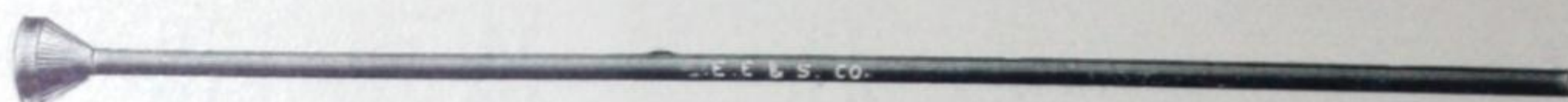
No. 0606.	Regular Size for No. 9 B. & S. Wire, or Finer,-----	Each, \$.50
" 0607.	Larger " " " 3 " " "-----	" 1.50
" 0608.	Extra Large Size for 3-0 " " "-----	" 2.00
" 0609.	Strap, Extra,-----	" .75

Digging Tamping and Crow Bars.



Digging Bars.

Octagon, $1\frac{1}{8}$ inch diameter; 8 feet long; weight, 30 lbs., best steel, ----- Each, \$3.50
 Round, $1\frac{1}{8}$ inch diameter; 8 feet long; weight, 27 lbs.; best steel, ----- " 3.30



Tamping Bar.

Face, $2\frac{1}{2}$ inches; diameter Bar, $\frac{3}{4}$ inch; (about 12 lbs.), ----- Each, \$1.26



Railroad Tamping Bar.

Solid Cast Steel, warranted, ----- Per Pound, 16 cents.
 Bessemer Steel, ----- " 08½ "

CROW BARS.



Pinch Point.



Wedge Point.

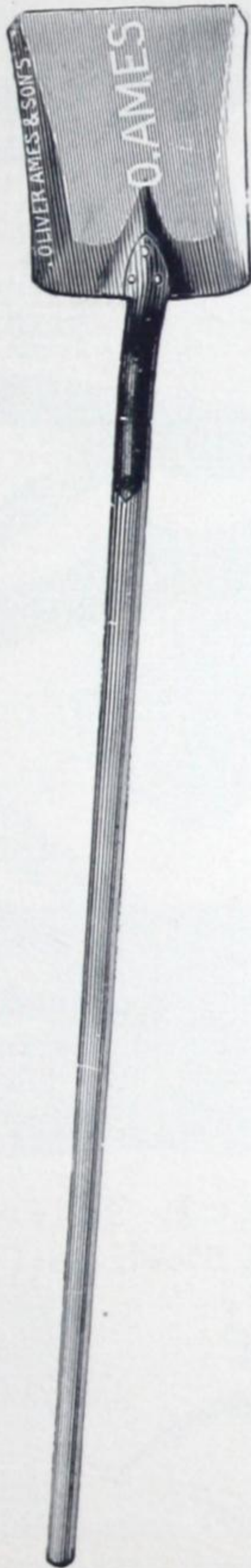
Weight 6 lbs., ----- Each, \$.50
 " 10 " ----- " .90

Long Handled Shovels.



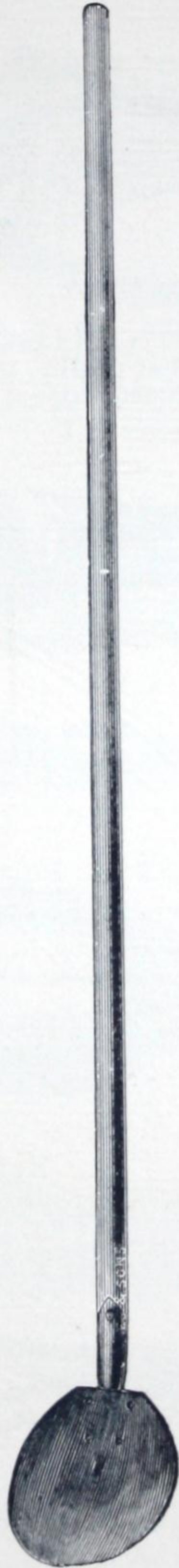
Shovels.

Post Hole.	7 Foot Handle,	Per Doz., \$12.00
"	8 " "	" " 15.00



Spades.

Long Handle,	Per Doz., \$18.00
"	" " 9.00



Post Mole or Telegraph Spoons.

10 Inch X 8 1/4 Inch, Handle 7 feet,	Per Doz., \$15.00
" " 8 " "	" " 18.00

Cutting Pliers and Climbers.



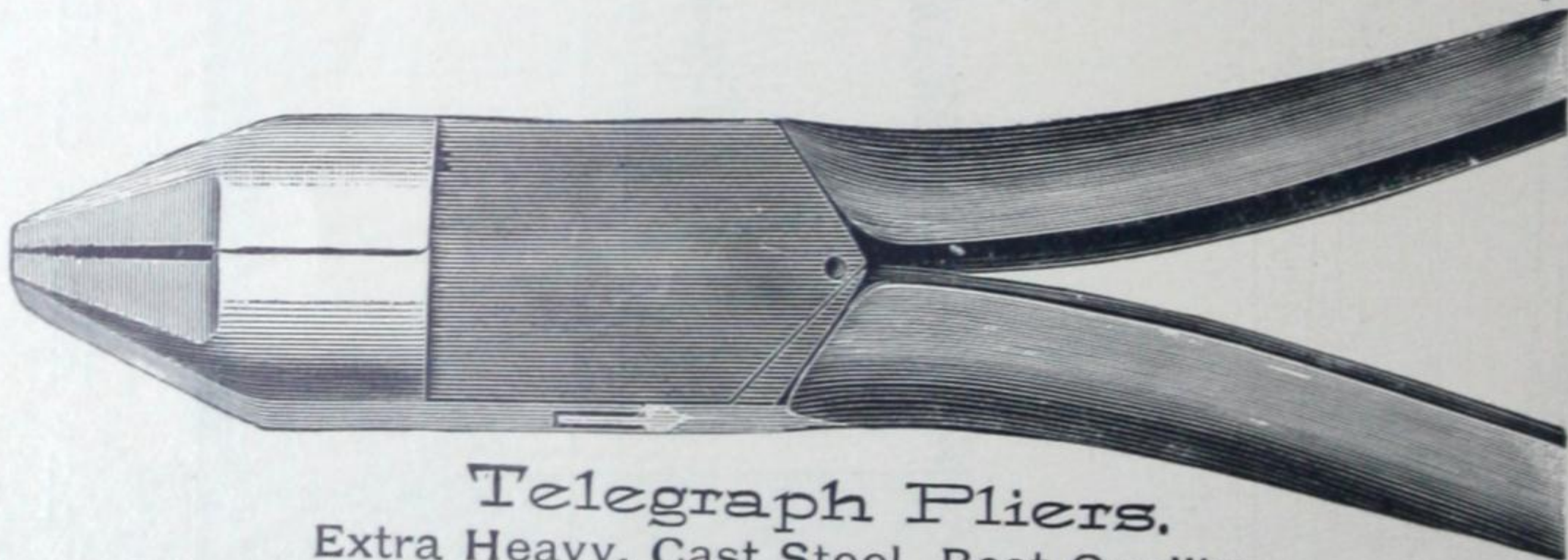
Button's Pliers and Wire Cutters.

Flat Nose, Best Quality, Inch.....	6	8	10
To cut not larger than.....	No. 11 Wire.	No. 8 Wire.	No. 6 Wire.
Per Dozen.....	\$12.00	\$15.00	\$24.00



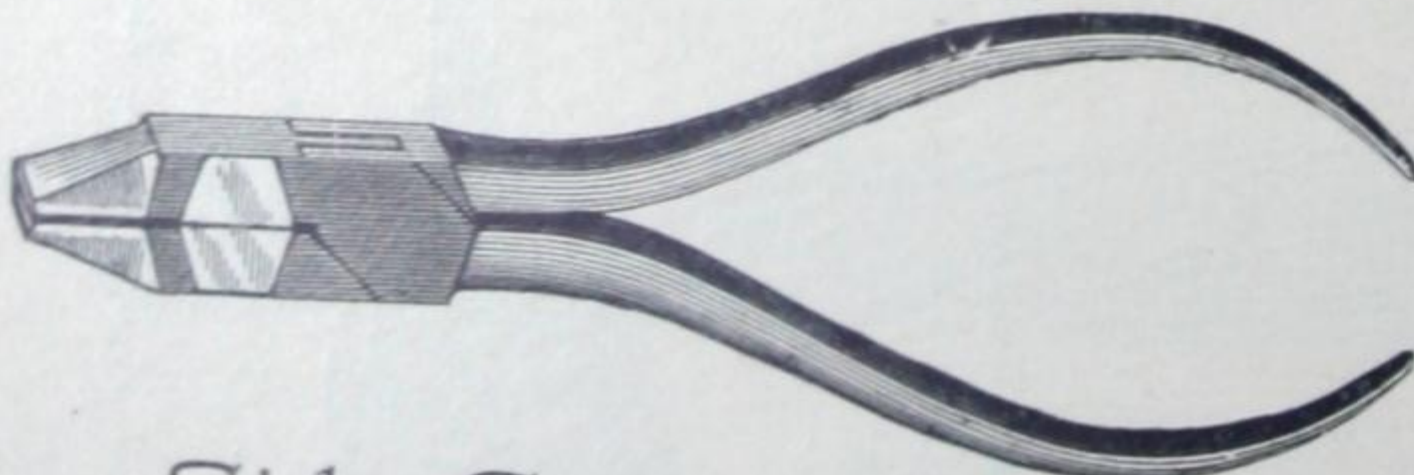
Cronk's Pliers and Wire Cutters.

Flat Nose, Best Quality, Inch.....	8	10
Per Dozen.....	\$15.00	\$21.00



Telegraph Pliers. Extra Heavy, Cast Steel, Best Quality.

Inch.....	4	5	7	8
No. 153, Stubs' Genuine.....	\$10.00	\$10.00	\$18.00	\$24.00
" 2078, Stubs' Pattern.....		4.95		



Side-Cutting Pliers.

Inch.....	5	5 1/2	6
No. 90, Flat Cutter.....	Per Doz. \$6.20	\$6.80	
" 91Y, " " Straw Col'd, "	7.50	\$8.30	

Telegraphers' Climbers.

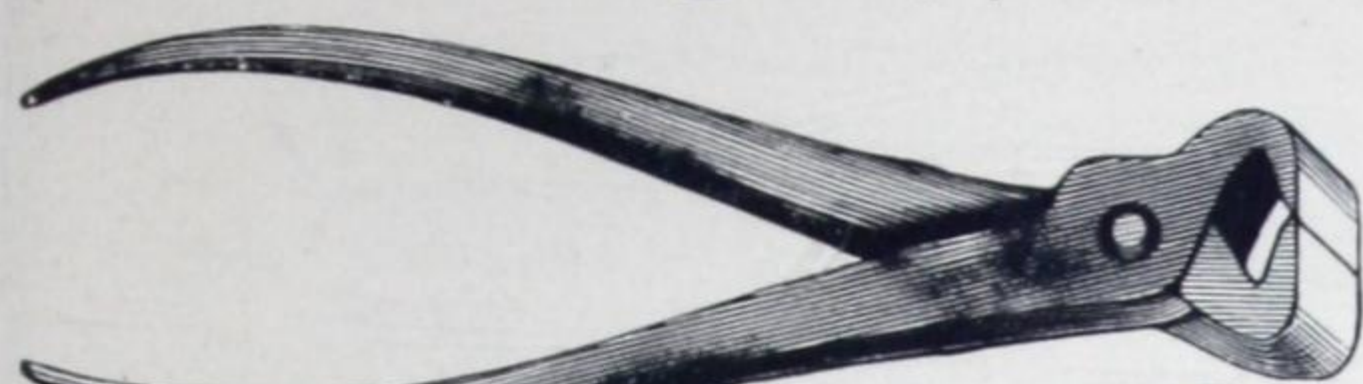
Eastern Pattern.

GOOD QUALITY.

Self Colored.

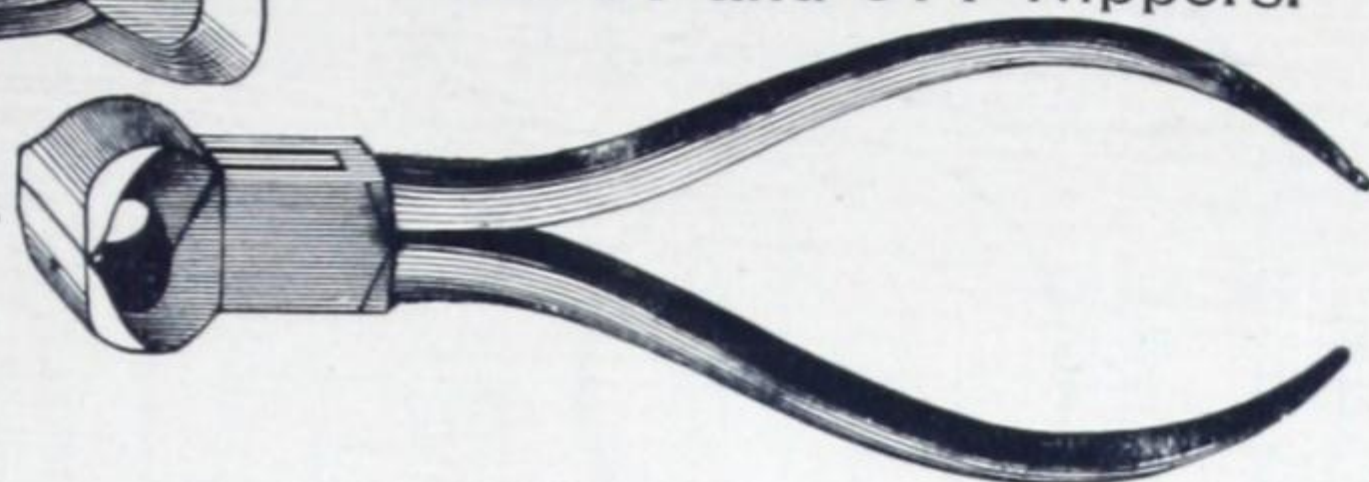
With Straps.....	Per Pair	\$2.00
Without Straps.....	" "	1.00
Straps Only.....	Per Set	1.00

Cutting Nippers and Hand Vises.



No. 60 Stub's Pattern Nippers.

No. 61 and 61Y Nippers.

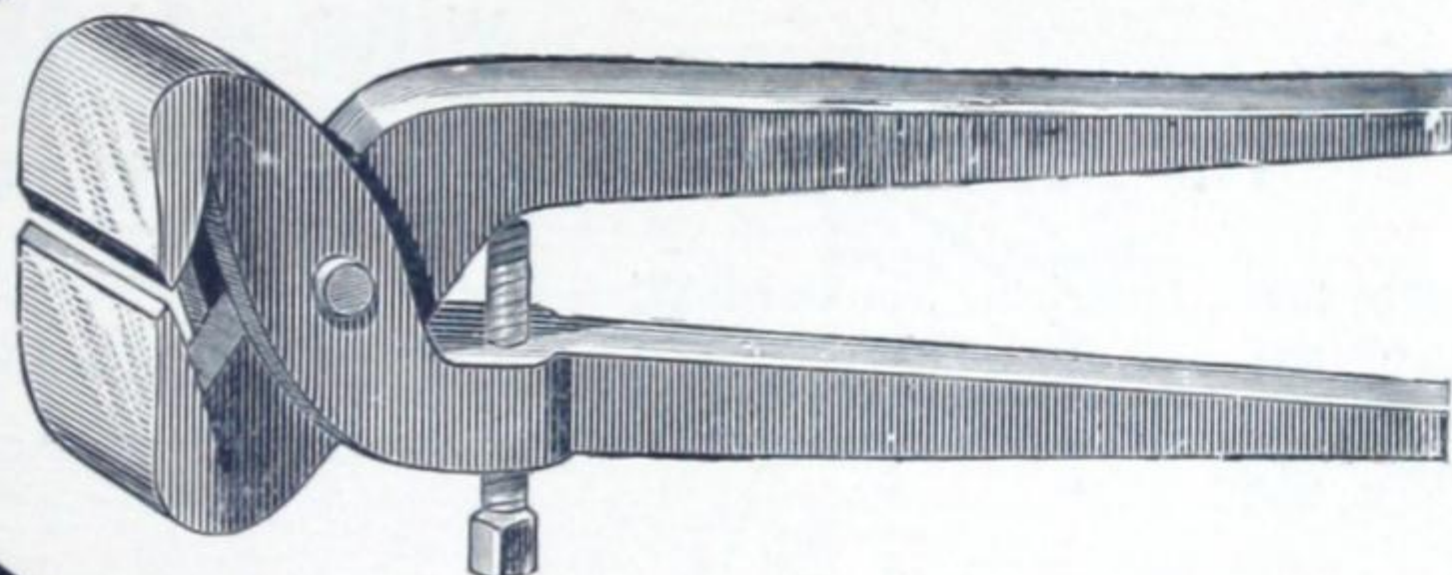


Front Cutting Nippers.

Inch,			5	6
No. 60.	Stub's Pattern, Front Cutting Nippers,	Per Dozen	\$5.25	\$6.50
" 154.	Stub's Genuine Front Nippers (cut not shown),	"	10.50	14.00
" 61.	Front Cutting Nippers, Extra Quality	"	6.40	8.00
" 62Y.	" " " " " Straw Colored	"		8.60

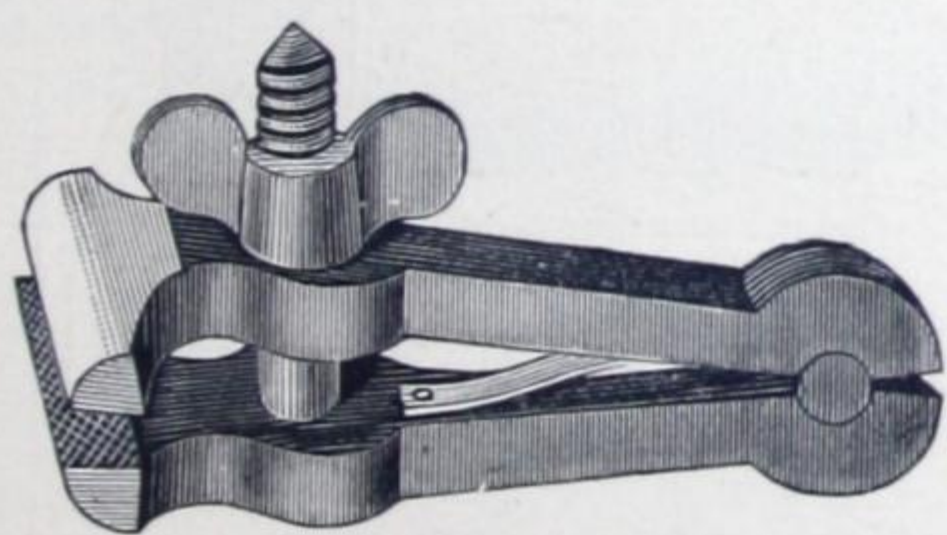


Mall's Patent Cutting Nippers

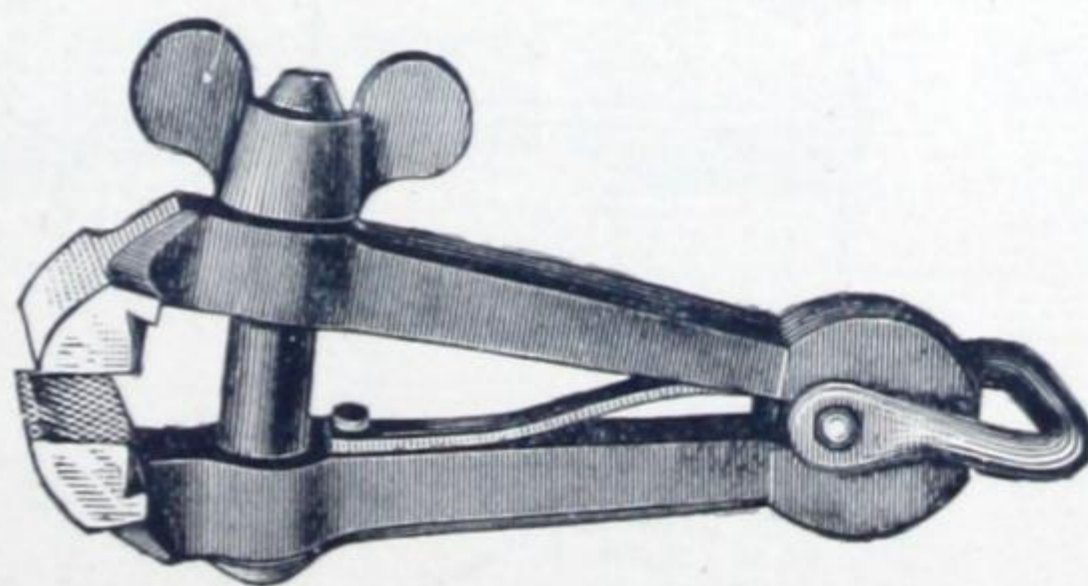


Improved Cutting Nippers.

No. 1, 4 in.	No. 2, 5 in.	No. 4, 7 in.	Each Nipper tested before leaving factory.
Per Doz. \$12.00	\$13.50	\$21.00	Number-----
Extra Jaws, Handles, Springs and Screws on Application.			Inch -----
			Each -----
			\$1.40 \$2.00



No. 140. Without Loop.



No. 146. With Loop.

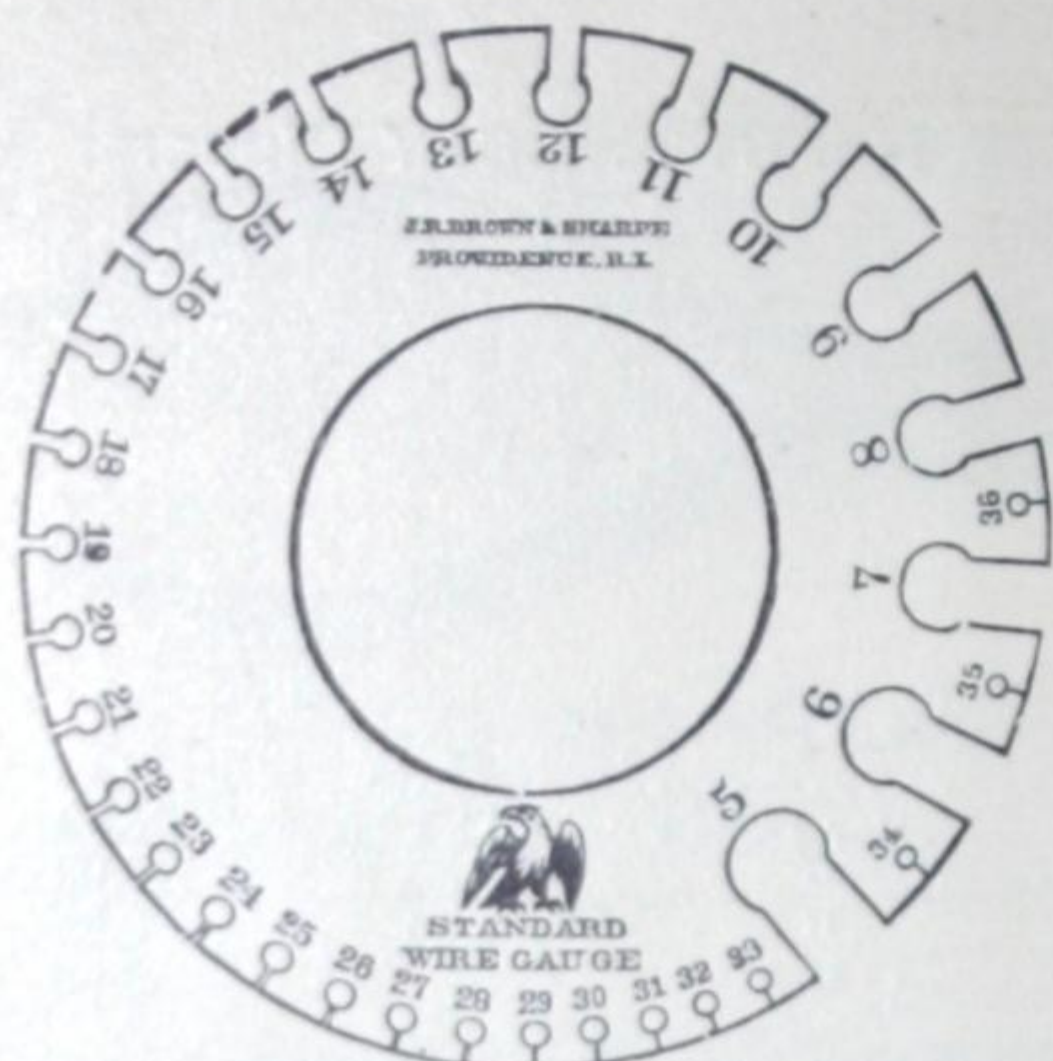
Hand Vises.

Inch,		4	4½	5
No. 140.	Black, with Bright Jaws, Per Dozen	\$5.40		\$6.00
" 144.	Handled, with Bright Jaws (cut not shown)		\$7.20	

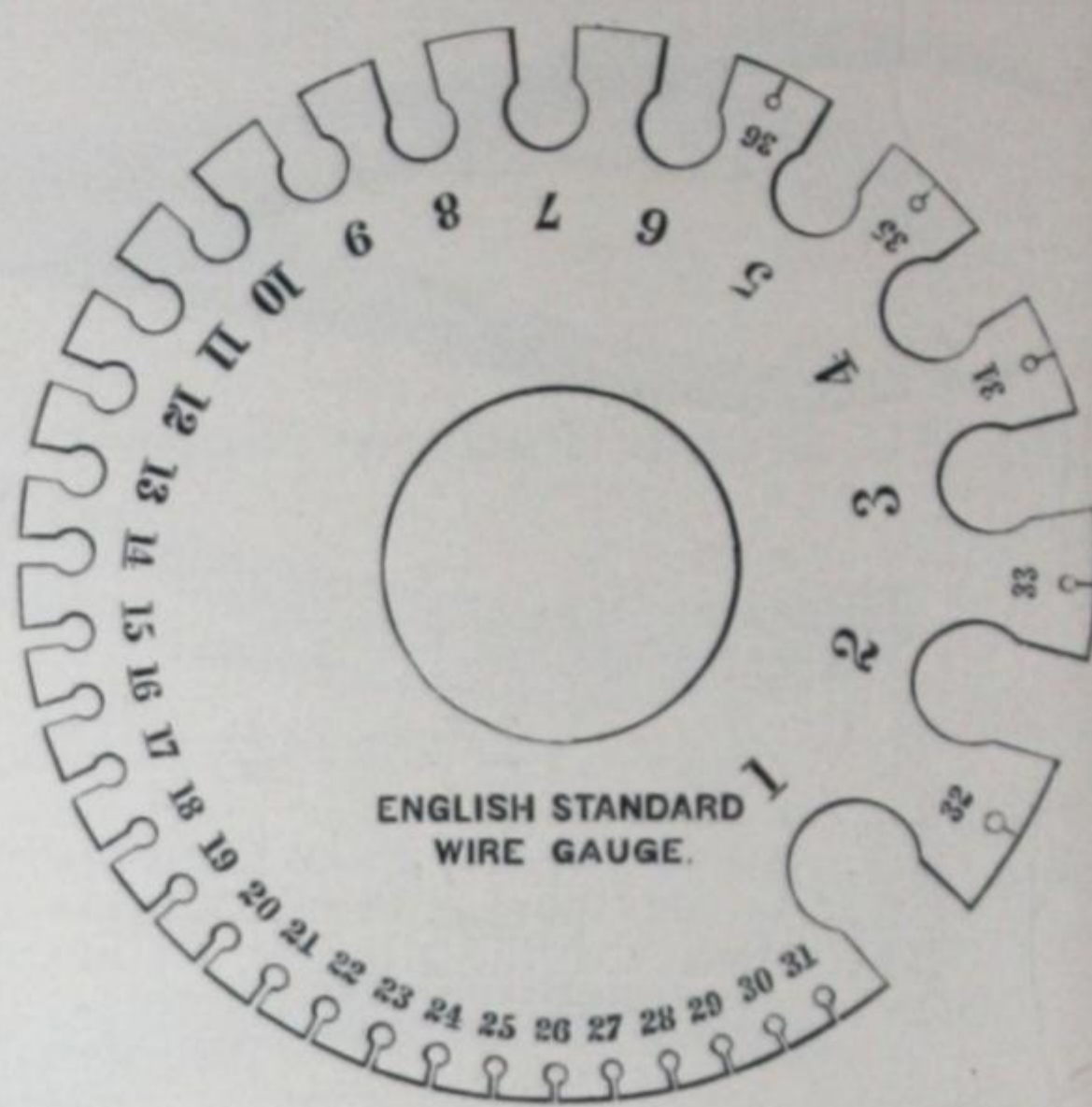
Telegrapher's Vises with Loop.

Inch,		5½	6
No. 146.	Black, Cast Steel, Extra Quality, with Loop, Per Dozen		\$18.00
" 182,	with Loop, Stub's Genuine, Extra Quality, " " "	\$29.50	39.00

Wire Gauges and Micrometer Calipers.



No. 350.



No. 352.

WIRE GAUGES.

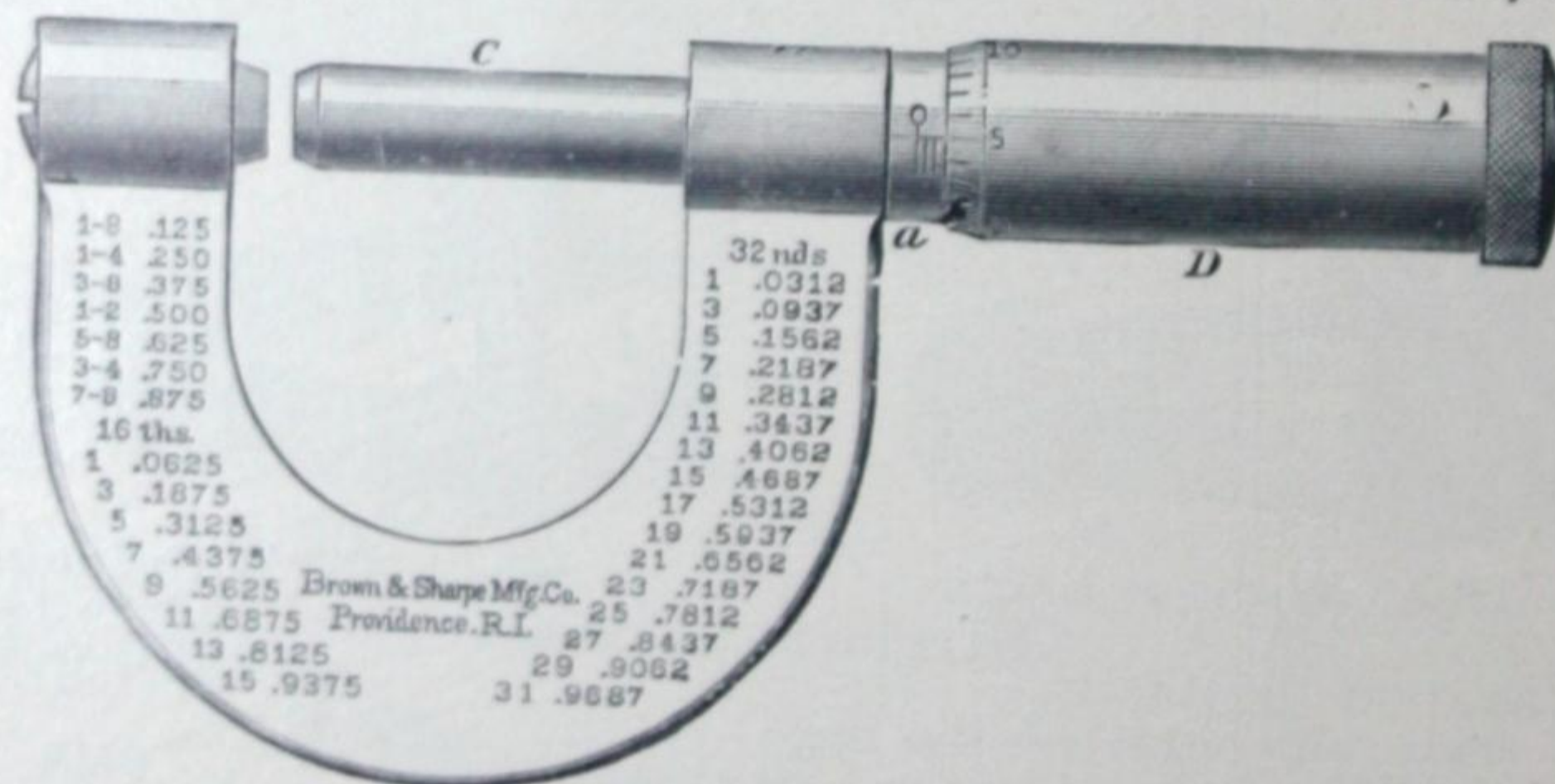
The size of any wire readily ascertained by use of these gauges.

No. 350	American Standard Wire Gauge, 5 to 36	.....	\$2 50
" 351	" " " " 0 to 36	.....	3 50
" 352	English Standard Wire Gauge, 1 to 36	.....	2 00
" 353	" " " " 6 to 36	.....	1 50

MICROMETER CALIPERS.

For Measuring Diameter of Wire and Thickness of Sheet Metal.

Although graduated to read to thousandths, half and quarter thousandths are readily obtained.



No. 354.

No. 354	Micrometer Caliper, measures from .001 to .1-inch	.....	\$5 50
	In Morocco Case	.....	6 00

Syracuse Twist Drills for Wood.

The Numbers of Drills on This Page Indicate the Size in 32ds.
Intermediate sizes furnished at price of next larger number.



PATENT WOOD BRACE DRILLS, Style A.

No.	Per Doz.	Each.	No.	Per Doz.	Each.	No.	Per Doz.	Each.	No.	Per Doz.	Each.
2	\$1.60	.15	8	\$3.00	.25	14	\$4.50	.40	20	\$ 6.00	.55
3	1.60	.15	9	3.50	.30	15	5.00	.45	22	6.50	.60
4	1.60	.15	10	3.50	.30	16	5.00	.45	24	7.00	.65
5	1.75	.18	11	4.00	.35	17	5.50	.50	26	7.50	.70
6	2.00	.20	12	4.00	.35	18	5.50	.50	28	8.00	.75
7	2.50	.22	13	4.50	.40	19	6.00	.55	30	9.00	.85
									32	10.00	.95



WOOD CHUCK DRILLS, Style B.

Style B is not made above No. 20. Prices same as for Style A.



SHORT WOOD BRACE DRILLS, Style C.

Length under heads from 2½ to 4½ inches.

FOR DOWELS, CASTERS, TIRE BOLTS, SUGAR BITS, ETC.

No.	Per Doz.	Each.	No.	Per Doz.	Each.	No.	Per Doz.	Each.	No.	Per Doz.	Each.
4	\$1.60	.15	6	\$2.00	.20	8	\$3.00	.25	12	\$4.00	.35
4½	1.60	.15	6½	2.00	.20	8½	3.00	.25	13	4.50	.40
4¾	1.75	.18	6¾	2.50	.22	8¾	3.50	.30	14	4.50	.40
5	1.75	.18	7	2.50	.22	9	3.50	.30	16	5.00	.45
5¼	1.75	.18	7¼	2.50	.22	10	3.50	.30	18	5.50	.50
5½	2.00	.20	7½	3.00	.25	11	4.00	.35	20	6.00	.55



BELL HANGERS' AND ELECTRICIANS' DRILLS, Style E.

No.	12 INCH. Per Dozen.	18 INCH. Per Dozen.	No.	24 INCH. Per Dozen.	30 INCH. Per Dozen.	No.	36 INCH. Per Dozen.
6	\$ 5.00	\$ 7.00	6	\$ 9.00	\$11.00	6	\$13.00
8	5.00	7.00	8	9.00	11.00	8	13.00
10	5.50	7.50	10	9.50	12.00	10	13.00
12	6.00	8.00	12	10.00	12.00	12	13.00
14	7.00	9.00	14	11.00	13.00	14	14.00
16	8.00	10.00	16	12.00	14.00	16	15.00
18	9.00	11.00	18	13.00	15.00	18	16.00
20	10.00	12.00	20	14.00	15.00	20	16.00
22	11.00	13.00	22	15.00	16.00	22	17.00
24	12.00	14.00	24	16.00	17.00	24	18.00
26	13.00	15.00	26	17.00	18.00	26	18.00
28	14.00	16.00	28	18.00	19.00	28	19.00
30	15.00	17.00	30	19.00	20.00	30	20.00
32	16.00	18.00	32	20.00	20.00	32	20.00
34	17.00	19.00	34	20.00	20.00	34	20.00
36	18.00	20.00	36	21.00	21.00	36	21.00

Tools and Lag Screws.

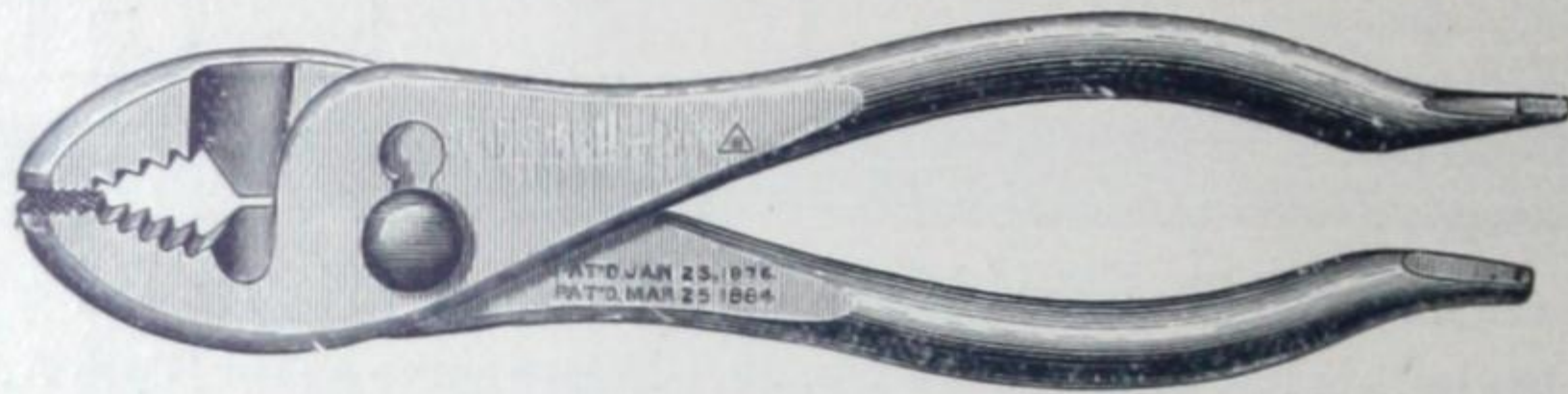
SCREW DRIVERS.



Champion Screw Drivers.

2½-inch	Per doz. \$3 00	7-inch	Per doz. \$7 00
3 "	" 3 50	8 "	" 8 00
4 "	" 4 25	9 "	" 9 00
5 "	" 5 00	10 "	" 10 00
6 "	" 6 00	12 "	" 12 00

IMPROVED COMBINATION PLIERS.



Gas Pliers, Wire Cutters, Wrench and Screw Driver Combined. By a quarter turn of the handle, and sliding from one hole to the other, it changes from smaller to large size.

6-inch, for $\frac{3}{8}$ to 1 inch, Round or Square, Nickel-Plated	Per doz. \$15 00
10 " " $\frac{1}{4}$ to $1\frac{1}{4}$ " " " " " "	" 21 00



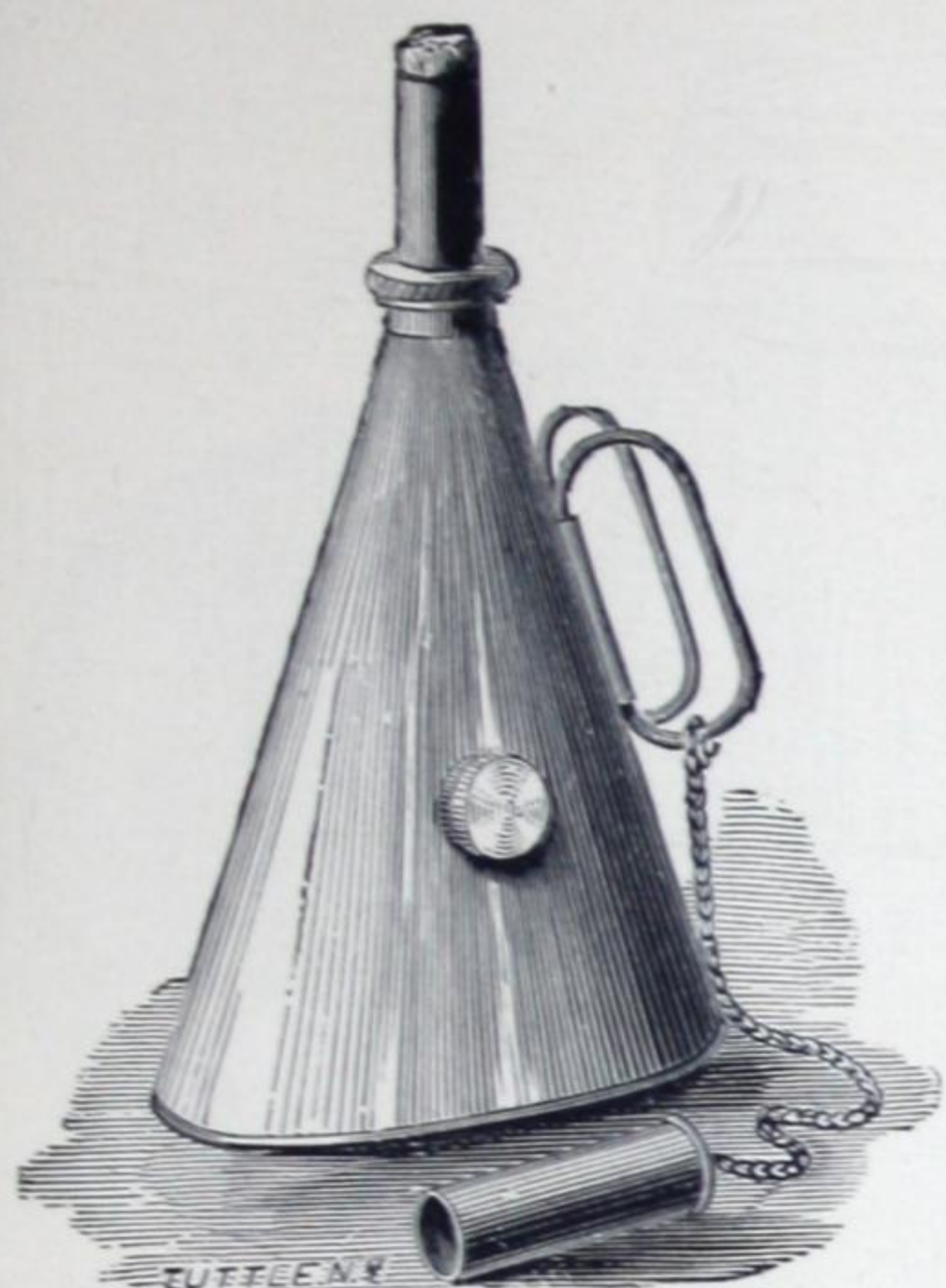
COACH OR LAG SCREWS.

Standard List.

Price Per Hundred.

Diameter.	1-4 & 5-16	3-8	7-16	1-2	9-16 & 5-8	3-4	7-8	1
Length under Head.								
1½	\$2.70	\$3.10	\$4.00	\$4.30				
2	2.90	3.30	4.25	4.65	\$6.50			
2½	3.10	3.50	4.50	5.00	7.05	\$10.20		
3	3.30	3.70	4.75	5.35	7.60	10.95	\$16.00	
3½	3.50	3.90	5.00	5.70	8.15	11.70	17.00	\$22.60
4	3.70	4.10	5.25	6.05	8.70	12.45	18.00	24.00
4½	3.90	4.30	5.50	6.40	9.25	13.20	19.00	25.40
5	4.10	4.50	5.75	6.75	9.80	13.95	20.00	26.80
5½	4.30	4.70	6.00	7.10	10.35	14.70	21.00	28.20
6	4.50	4.90	6.25	7.50	10.90	15.50	22.00	29.60
7			6.75	8.20	12.00	17.00	24.00	32.40
8			7.25	8.90	13.10	18.50	26.00	35.20
9			7.75	9.60	14.20	20.00	28.00	38.00
10				10.30	15.30	21.50	30.00	40.80
11				11.00	16.40	23.00	32.00	43.60
12				11.70	17.50	24.50	34.00	46.40

Gasoline Furnaces and Torches.



Linemen's Torch.

Tin, ----- Price, Each, \$1.50
Brass, ----- " 2.00

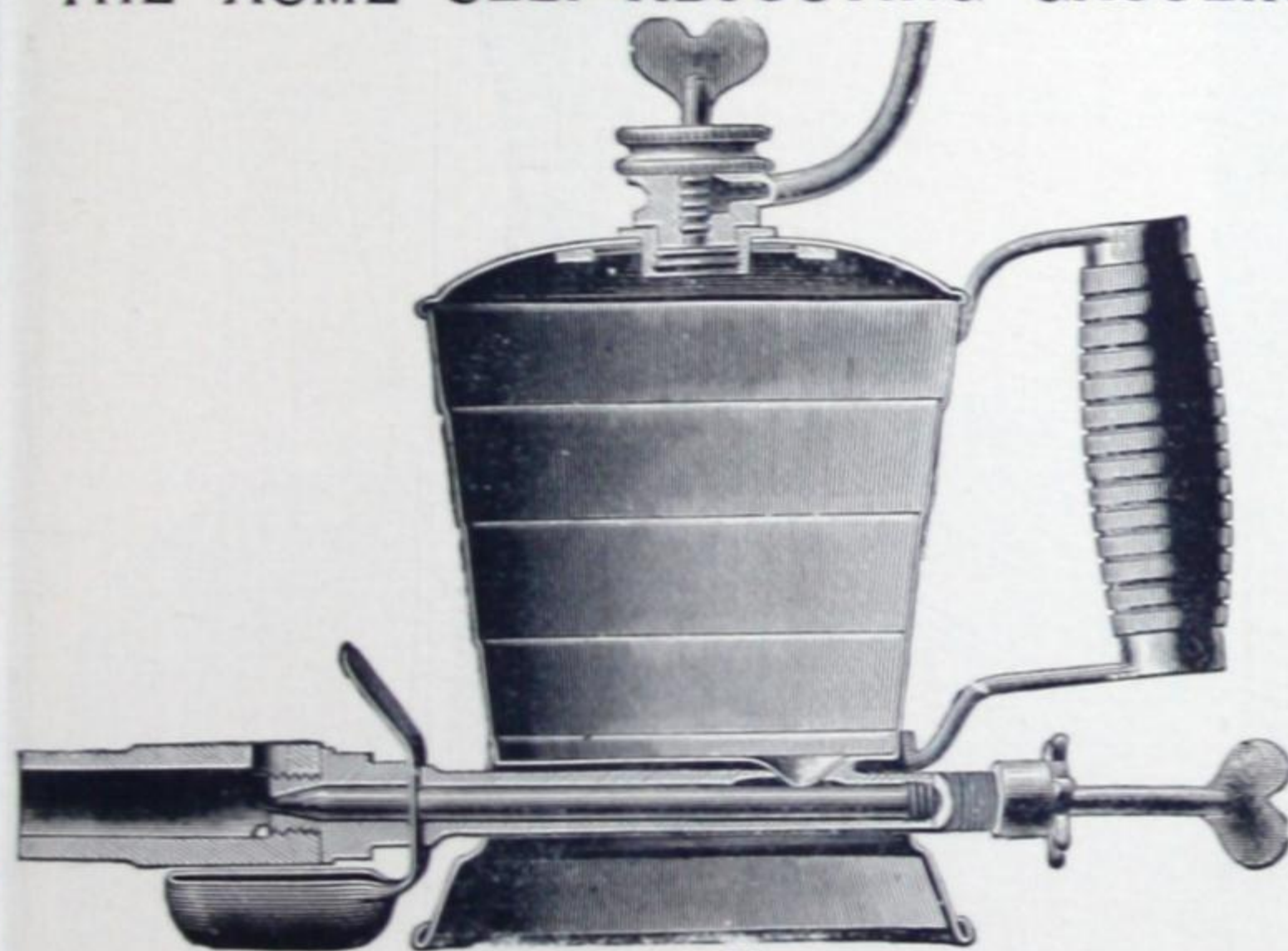


The Aurora Furnace.

For Heating Soldering Irons. Also Used with Kettle
for Heavy Work.

Price, ----- Each, \$8.00

THE ACME SELF-ADJUSTING GASOLINE SOLDERING TORCH.



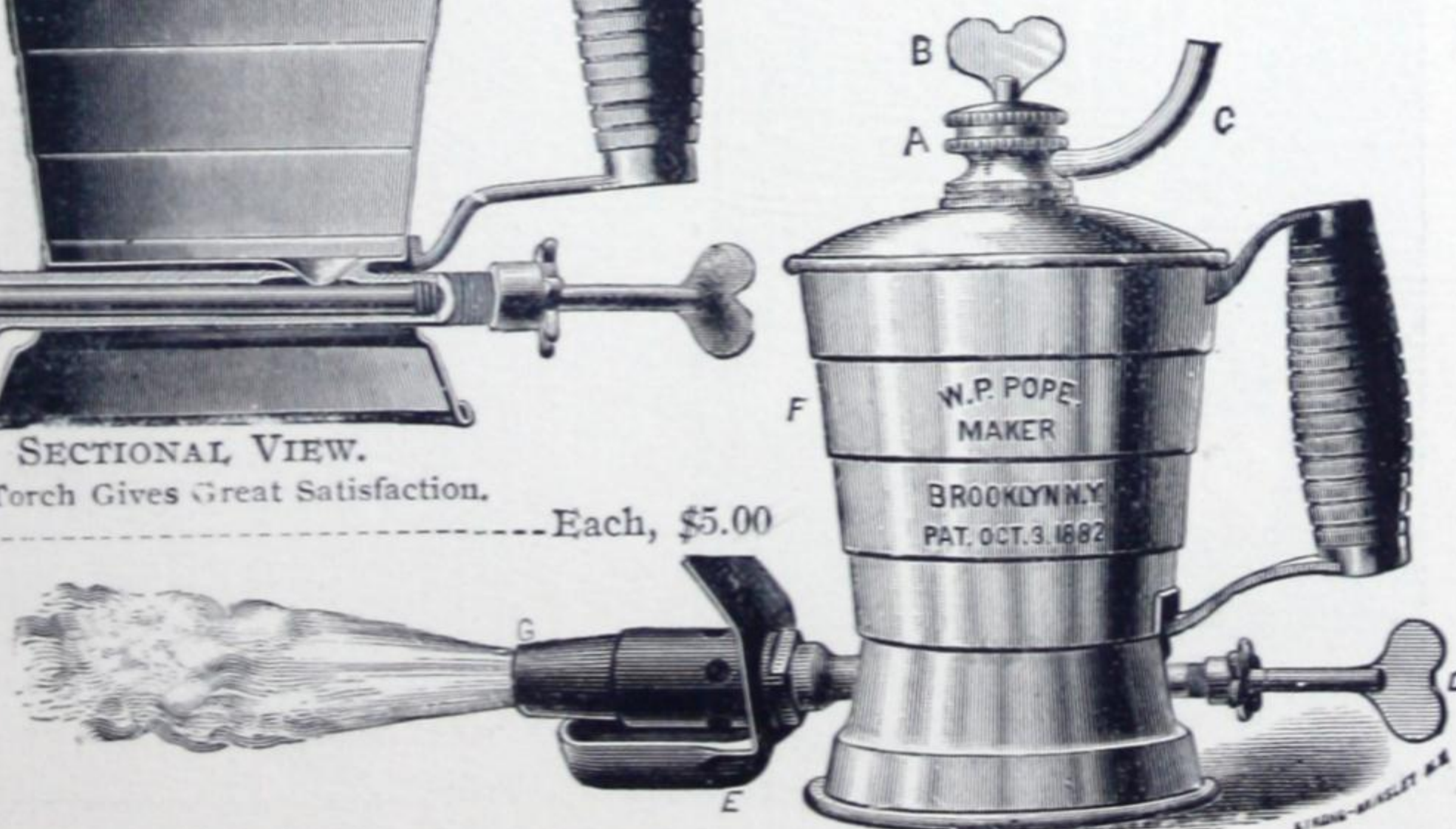
SECTIONAL VIEW.

This Torch Gives Great Satisfaction.

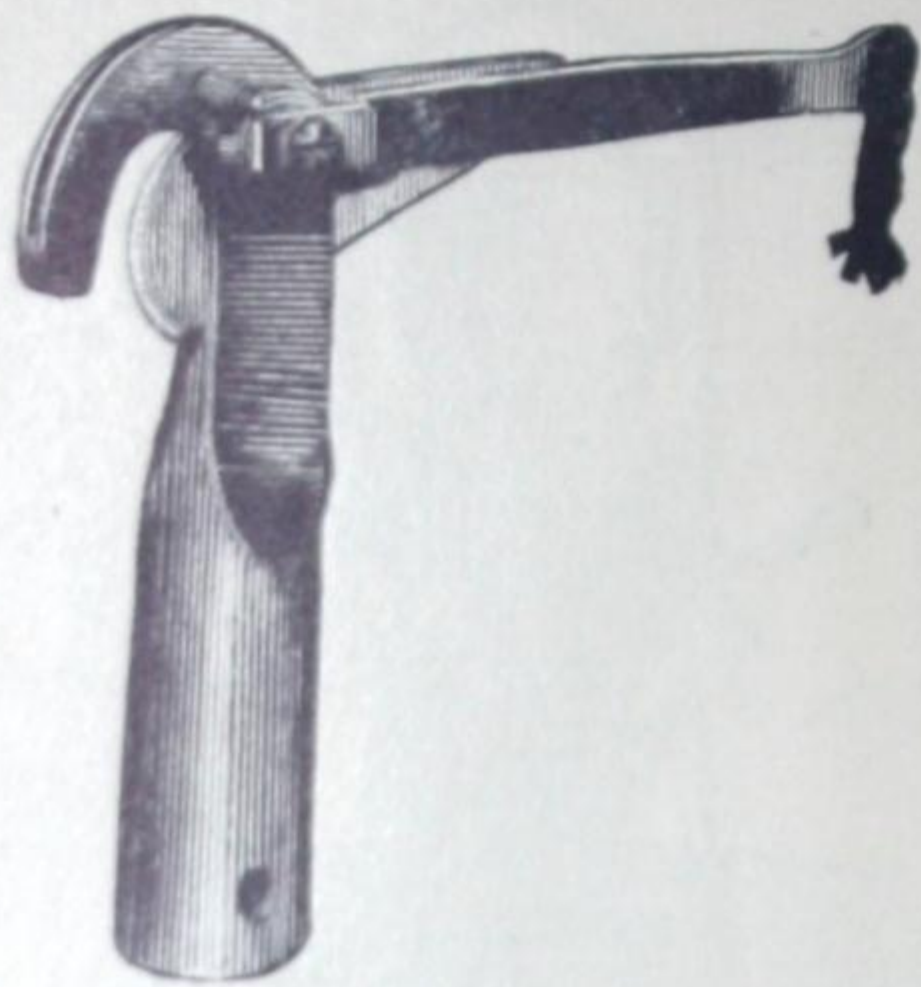
Price, ----- Each, \$5.00

Great economy in producing immense heat, very simple in construction, self-acting while in operation. The size of flame is controlled by screw D.

Weight, 7 $\frac{3}{4}$ lbs. Capacity, 1 $\frac{1}{2}$ pts.



Tree Trimmers.

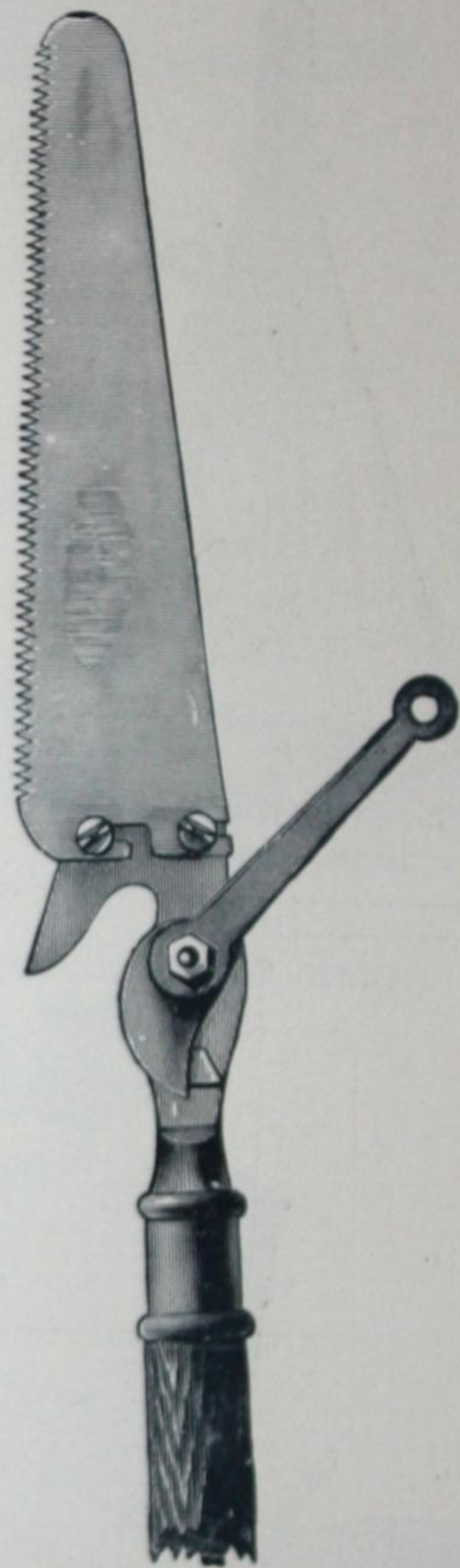


Waters' Improved
Tree Pruners.

4 Foot,	-----	Each, \$2.00
6 "	-----	" 2.25
8 "	-----	" 2.50



Above cut shows the method of operation of
Tree Trimmers.



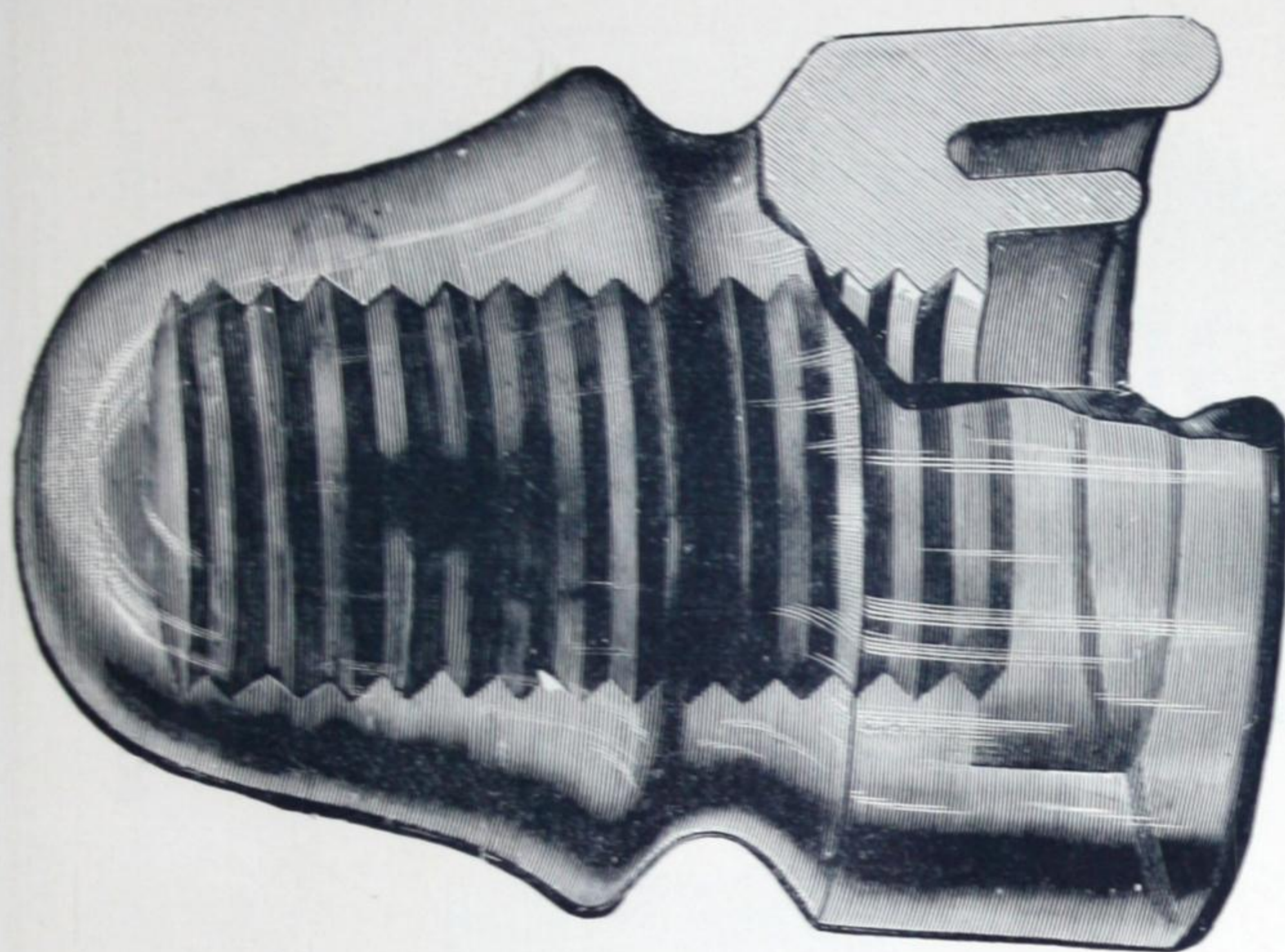
Improved
Tree Trimmer.

Combines a high class Pruning Knife for small limbs, and a fine Cast Steel Saw for cutting off large limbs rapidly.

Can be used with or without a pole. The saw is detachable.

Price, ----- Each, \$2.50

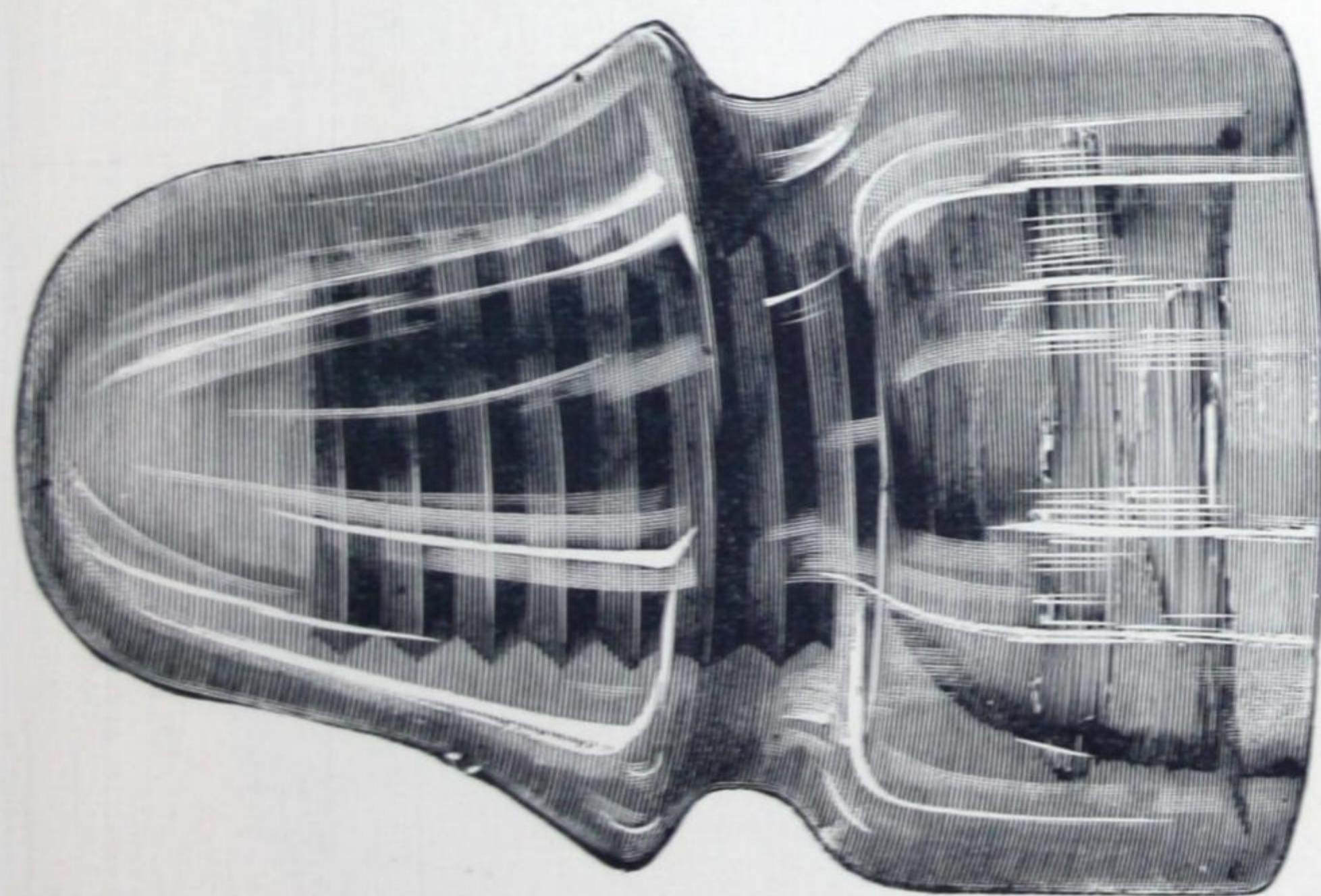
Screw Glass Insulators.



THE "DEEP GROOVE"
DOUBLE PETTICOAT" PATTERN
SCREW GLASS INSULATOR
FOR ELECTRIC LIGHT LINES.

Price, ----- Each, 5 Cents.

(CUTS FULL SIZE.)



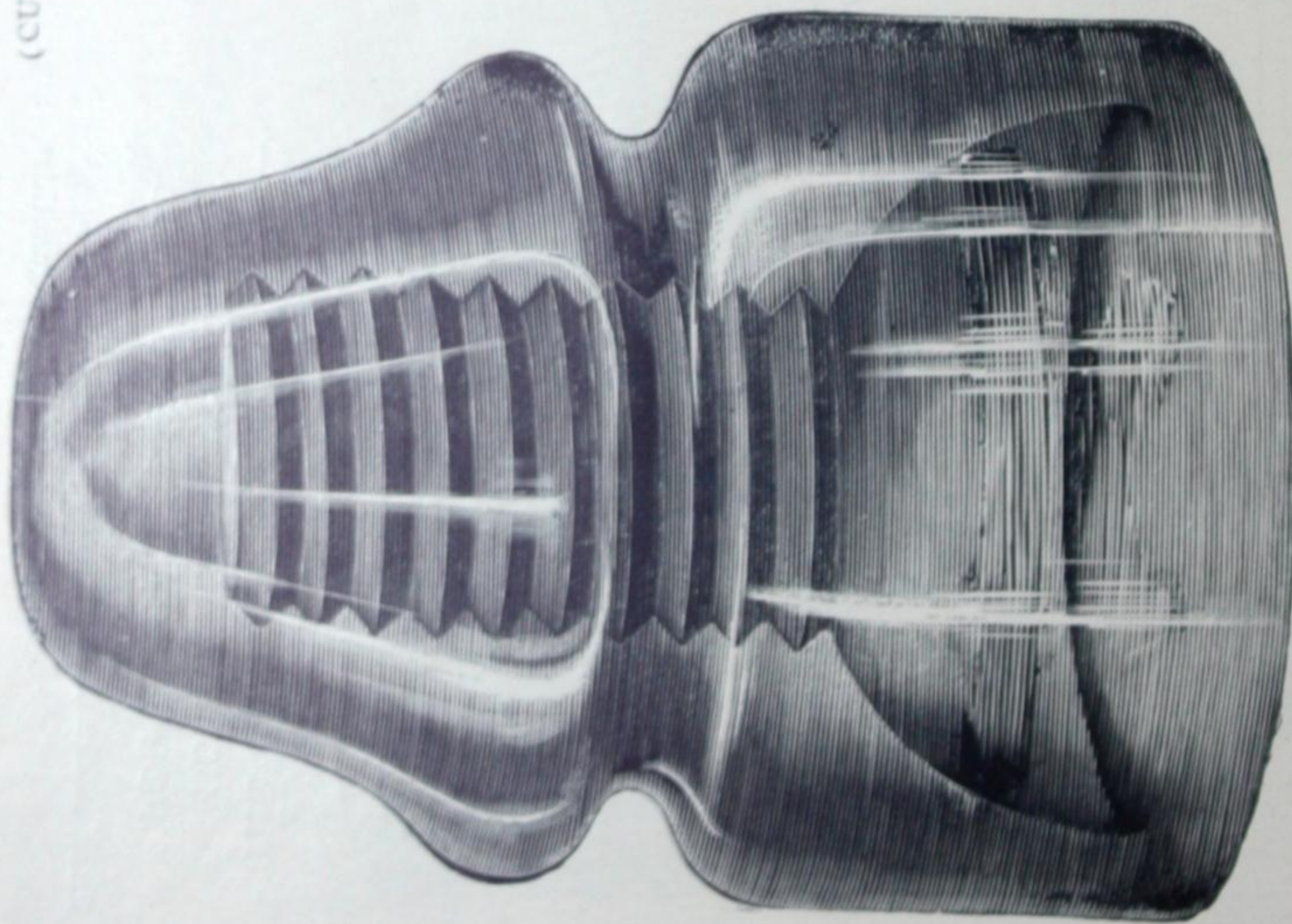
THE "DEEP GROOVE" PATTERN
SCREW GLASS INSULATOR
FOR ELECTRIC LIGHT LINES.

Price, ----- Each, 4 Cents.

In Quantities, Special Prices Upon Application.

Screw Glass Insulators. (CONTINUED.)

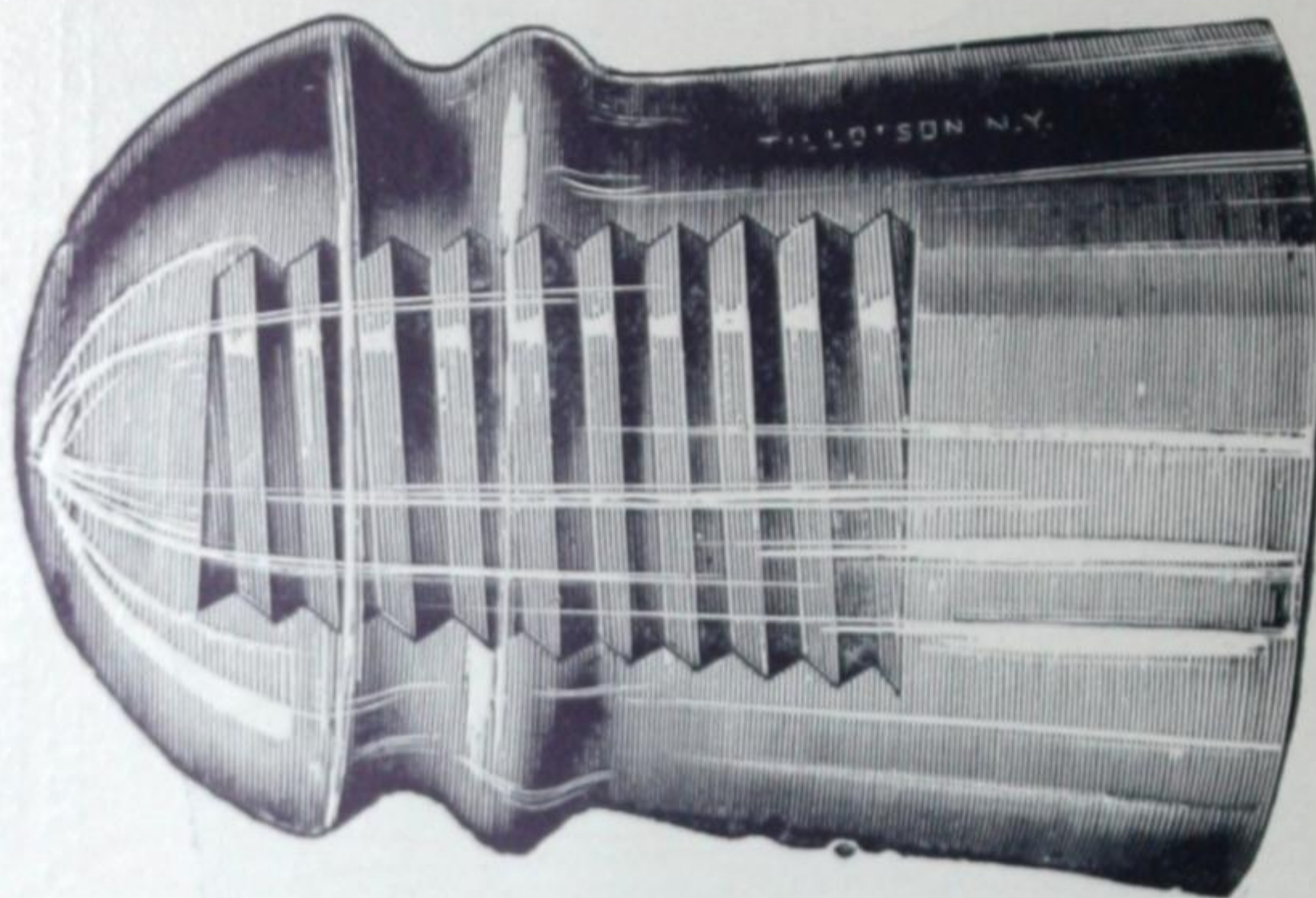
(CUTS FULL SIZE.)



THE "REGULAR" PATTERN
SCREW GLASS INSULATOR.

Price, Each, 4 Cents.

In Quantities, Special Prices Upon Application.



THE "PONY" PATTERN
SCREW GLASS INSULATOR.

Price, Each, 3 Cents.

Porcelain Tube, Rubber Hook and Floor Insulator.

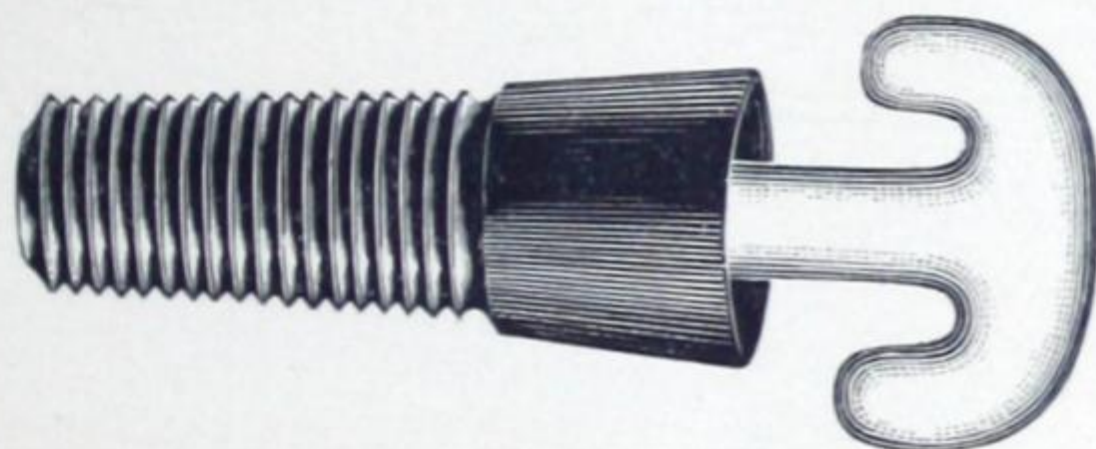


No. 13.

- | | | |
|--------|--|---------------|
| No. 13 | for No. 6 Wire and under, 4 inches long, unglazed..... | .021½c. each. |
| " 14 | for No. 2 to 5 Wire, 4 inches long, unglazed..... | .031½ " " |

Longer Tubes made to order up to 18 inches in length. Prices on application.

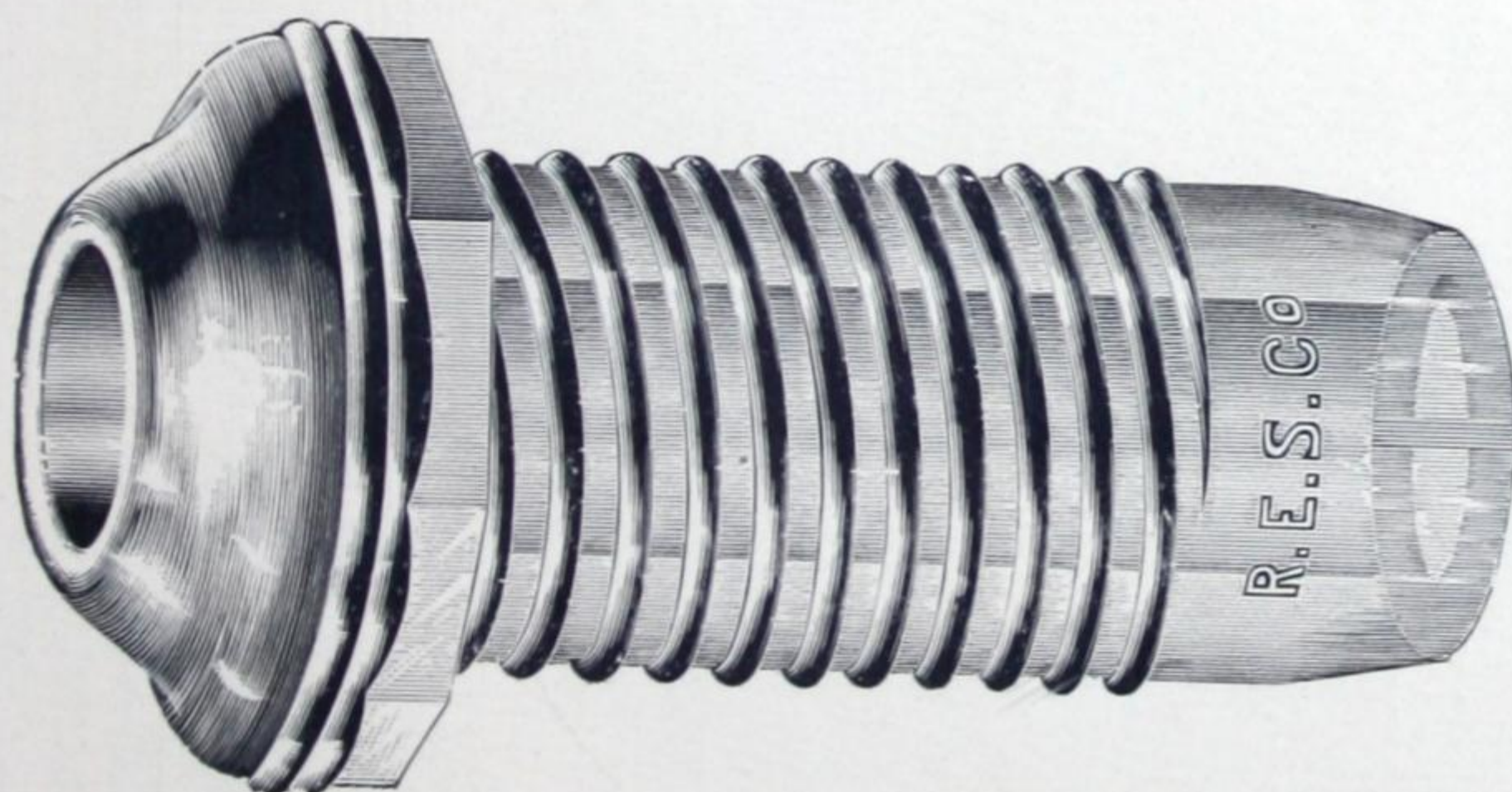
Rubber Hook Insulator.



No. 1908.

Rubber Hook.

Price.....Each, \$0.14



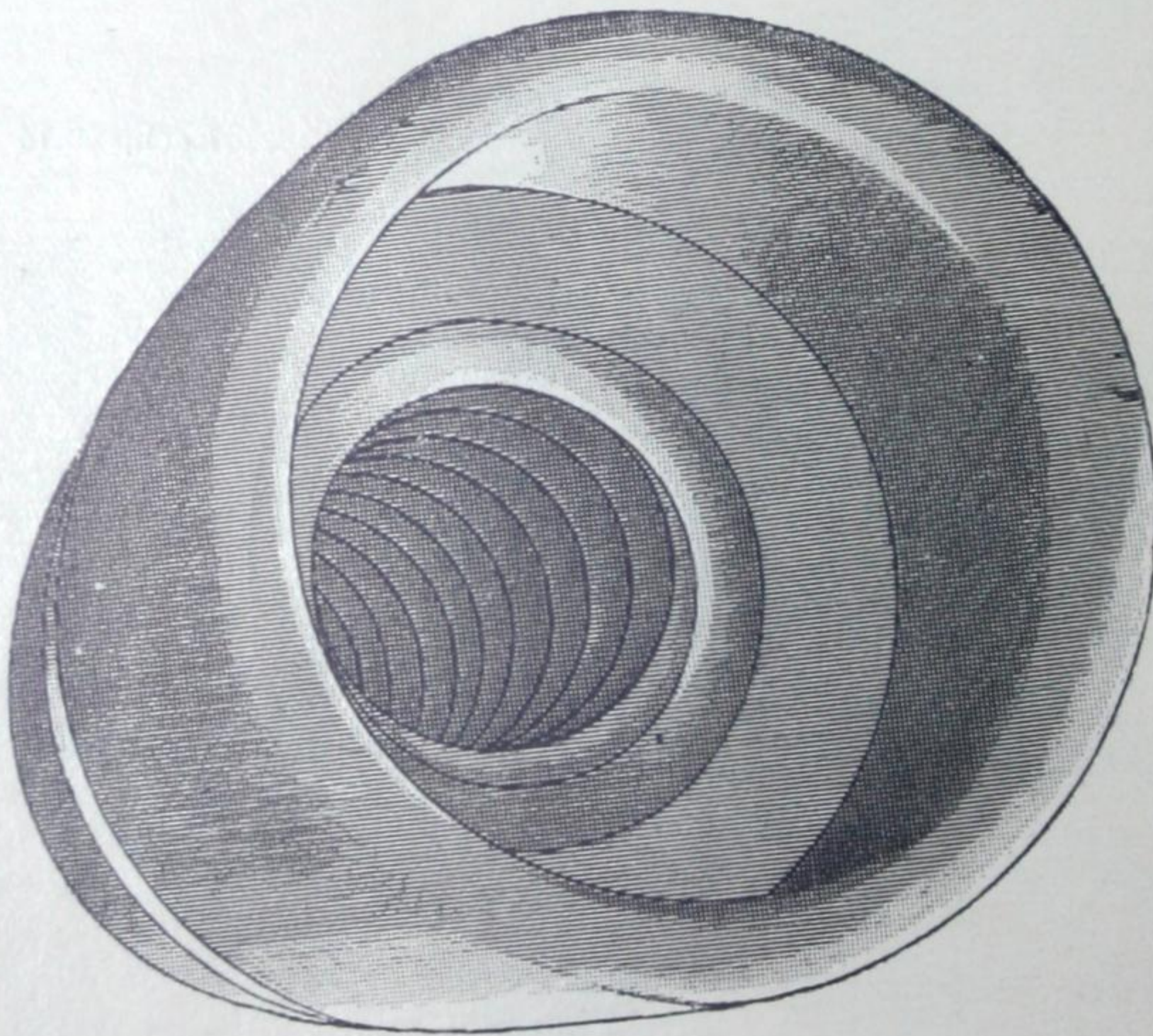
No. 1947.

Floor Insulator.

ALSO USED AS WINDOW TUBES FOR HEAVY ELECTRIC LIGHT WIRES.

Price.....Each, \$0.10

Porcelain High Resistance Line Insulators.

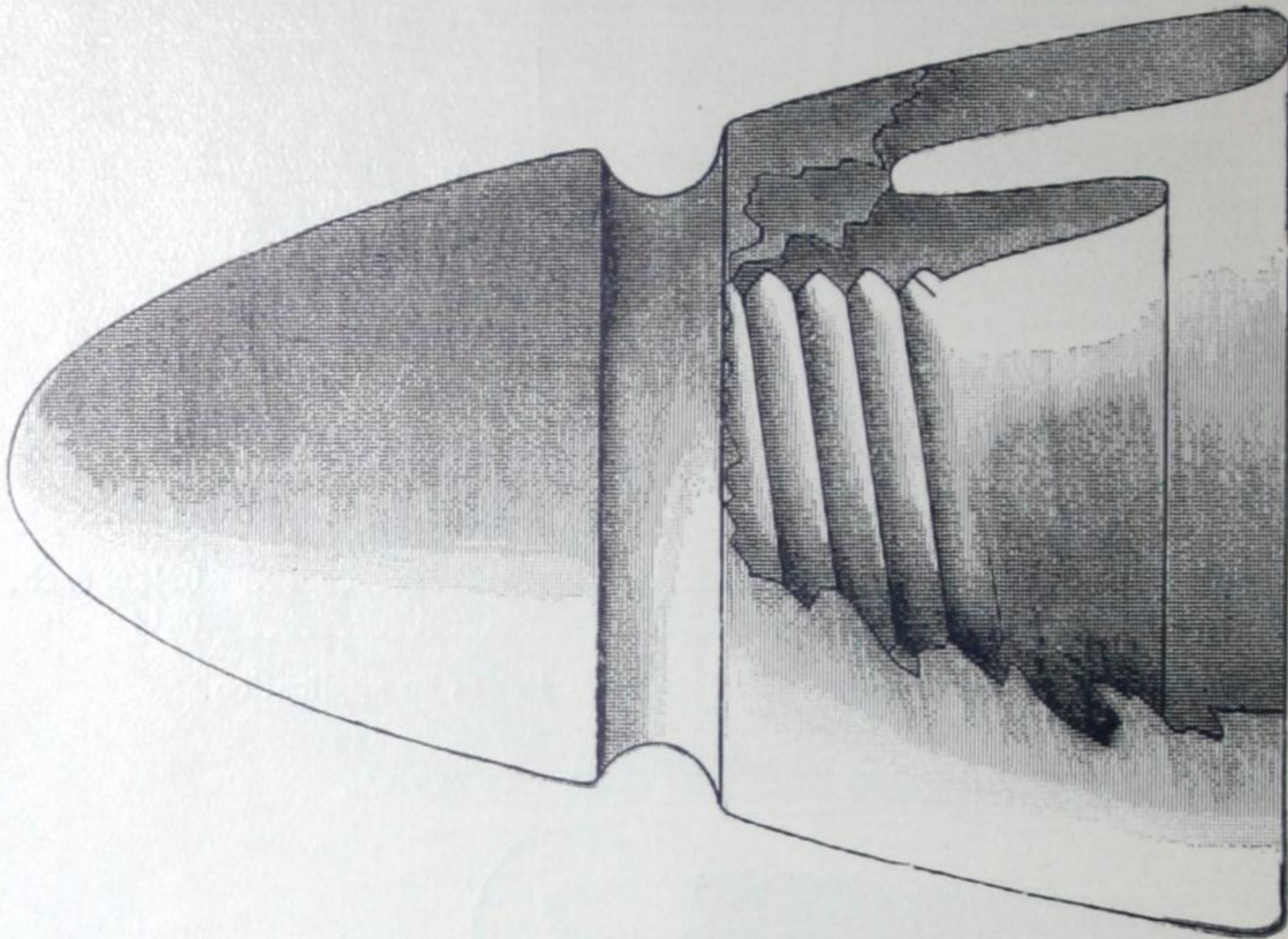


HIGH RESISTANCE

Porcelain and Paraffine Line Insulator.

Price.....Each, \$0 15

This Insulator is designed for high potential circuits and as an improvement on the oil insulators experimented with in this country and abroad. Has a metallic core threaded to receive the pin and between the core and body of the Porcelain Insulator is a porous composition filled with paraffine.

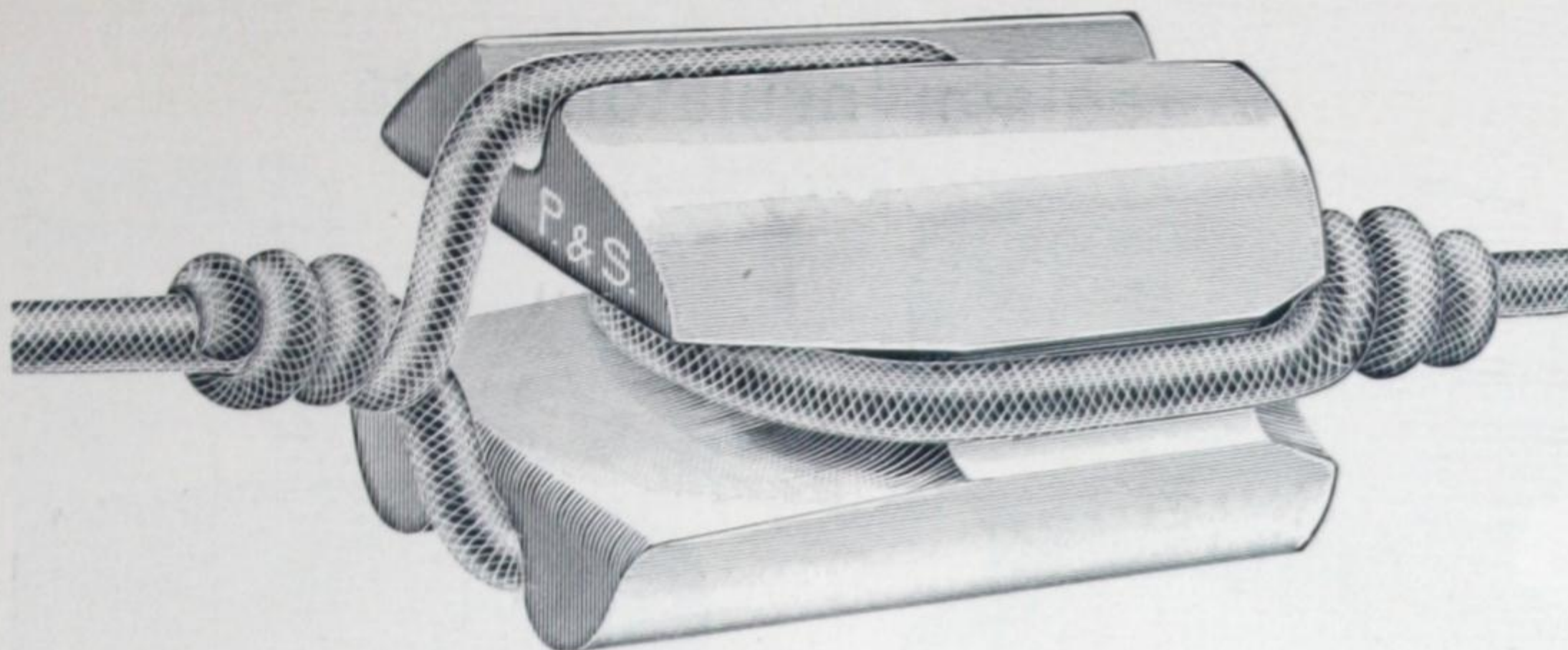


DEEP GROOVE

Double Petticoat Porcelain Line Insulator.

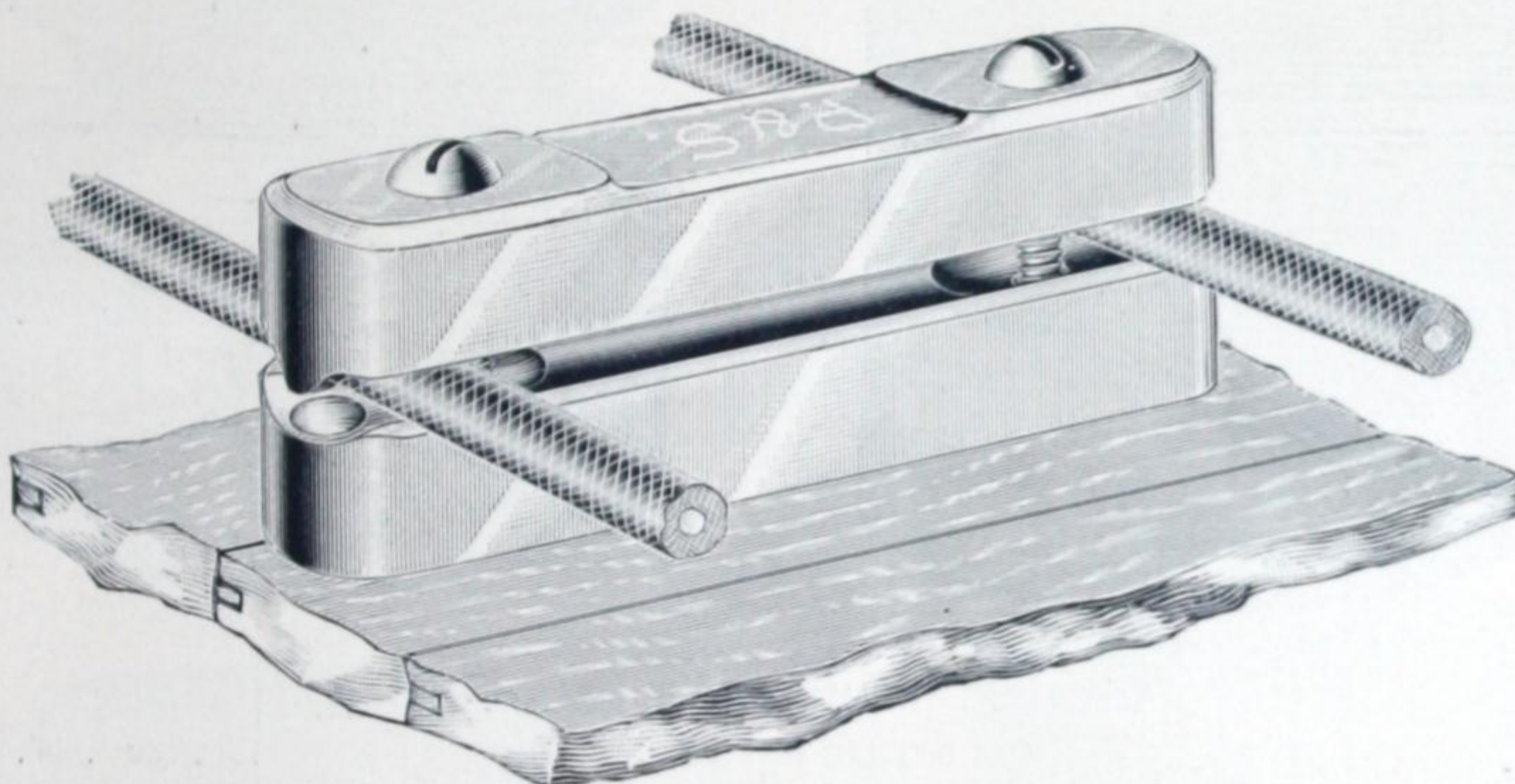
Price.....Each, \$0 13

Seymour's Insulators.

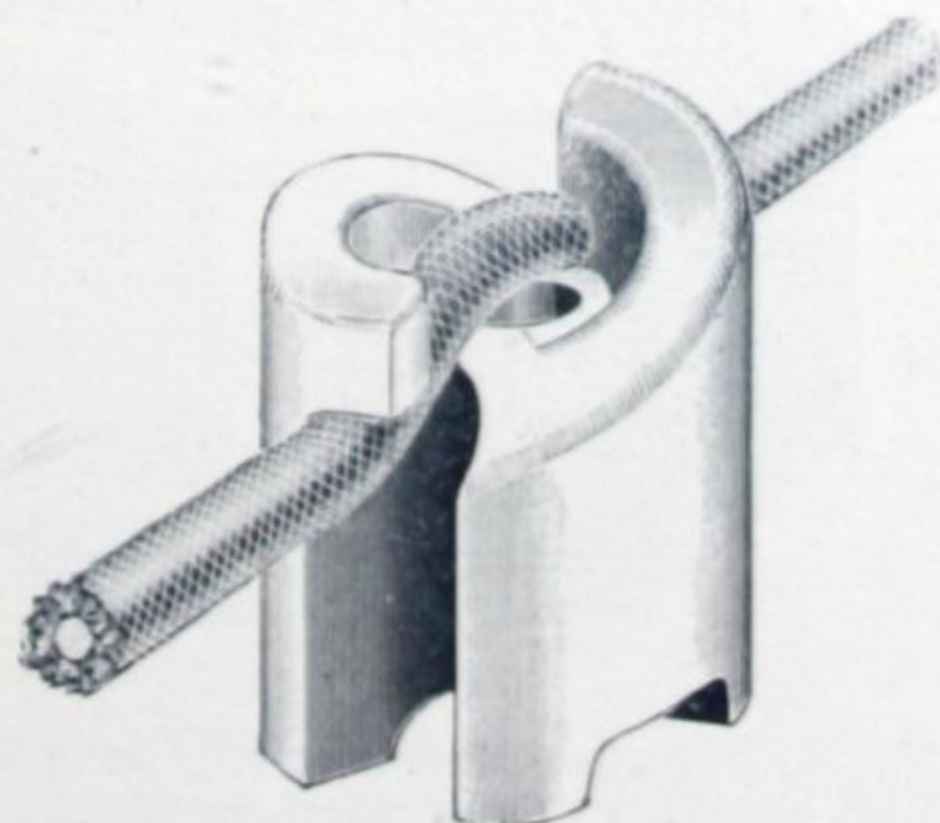
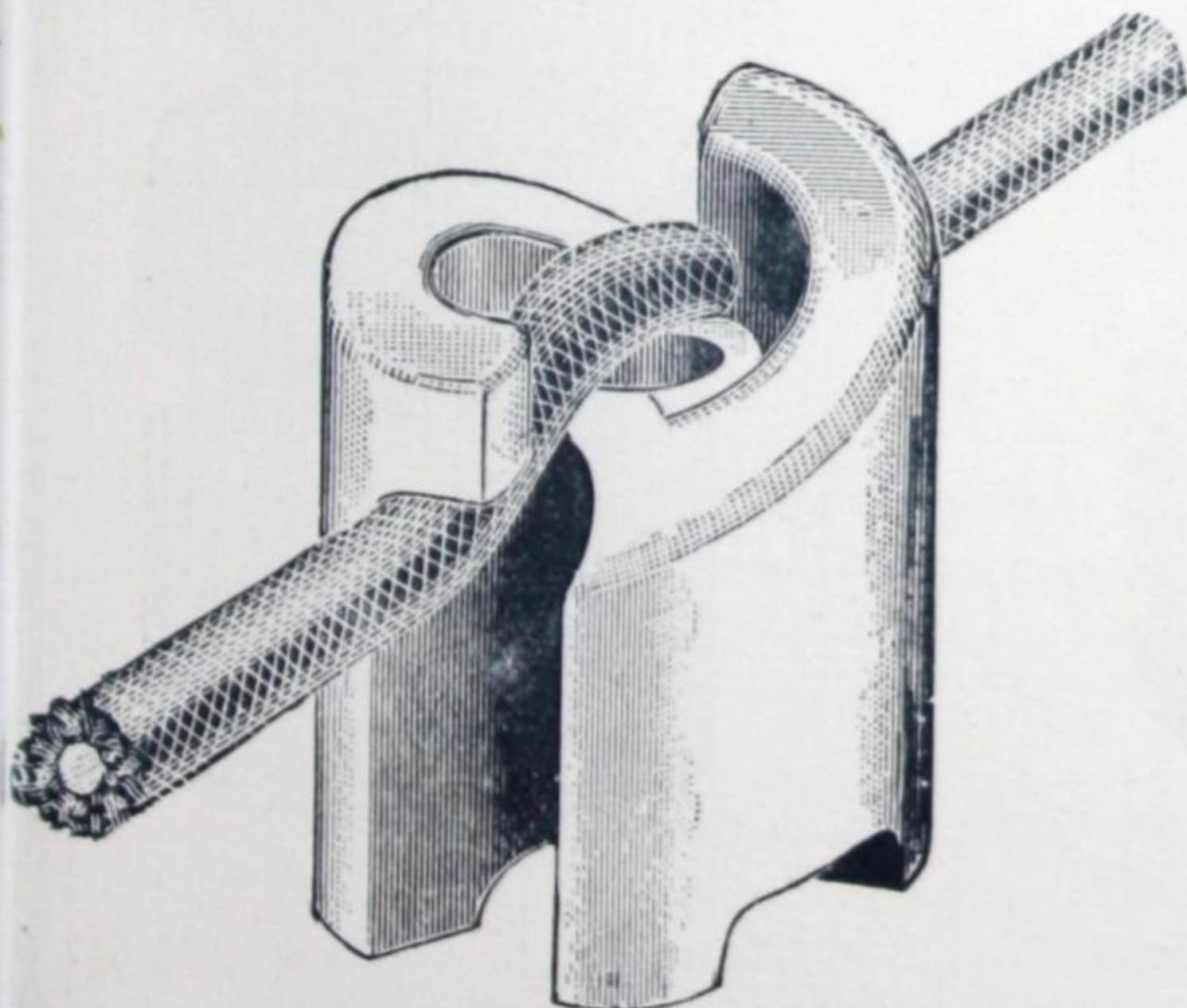


Also used for Tree Insulator.

No. 63 Large Circuit Breaker 0 07 No. 64 Small Circuit Breaker.....\$0 05



No. 65 China Cleats, glazed, per 100, \$5 00 No. 66 China Cleats, unglaxed, per 1000 ~~\$~~3 50

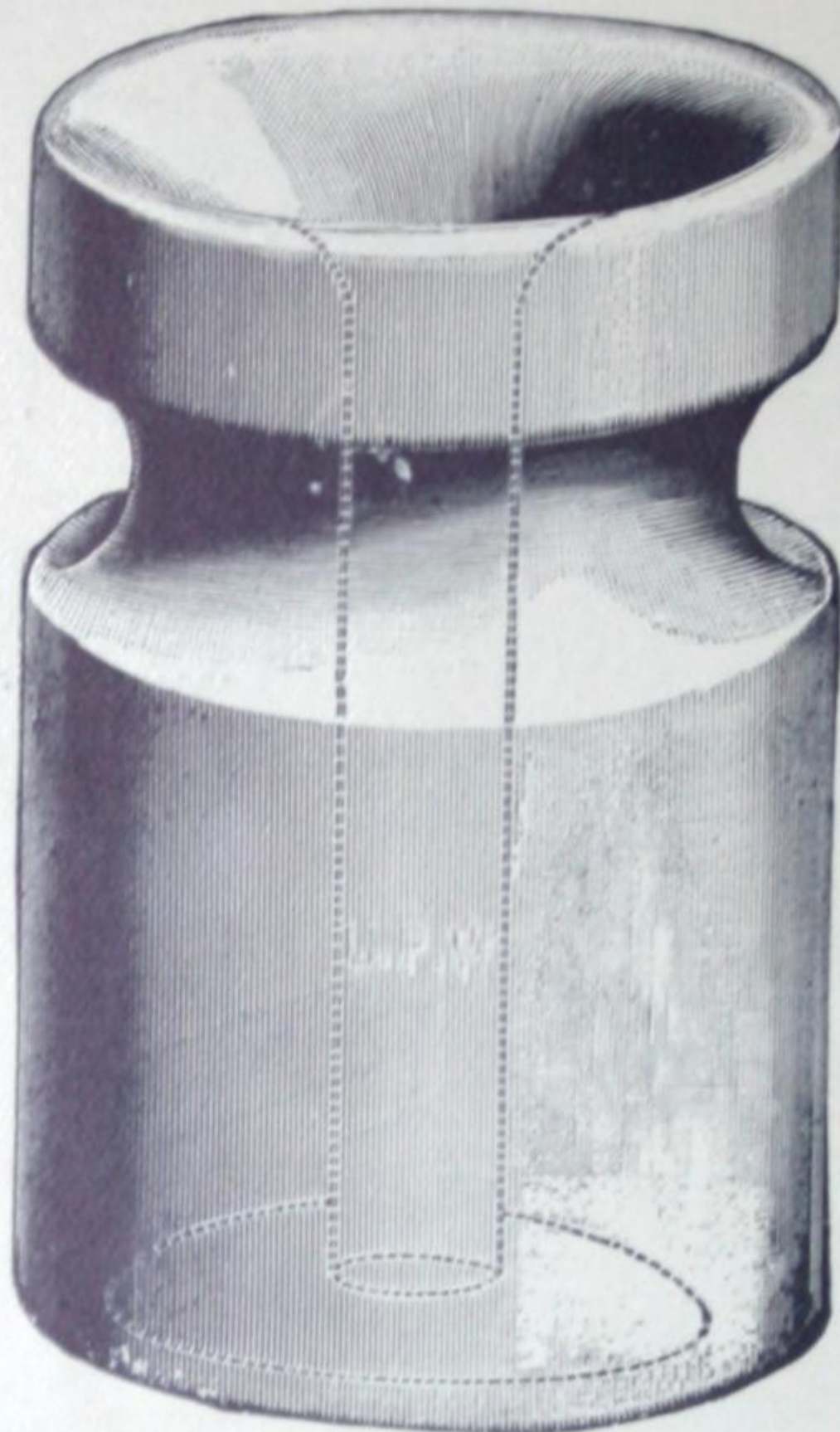


No. 60 Wiring Insulator, price, per 1000,
glazed\$28 00
unglaxed 18 00

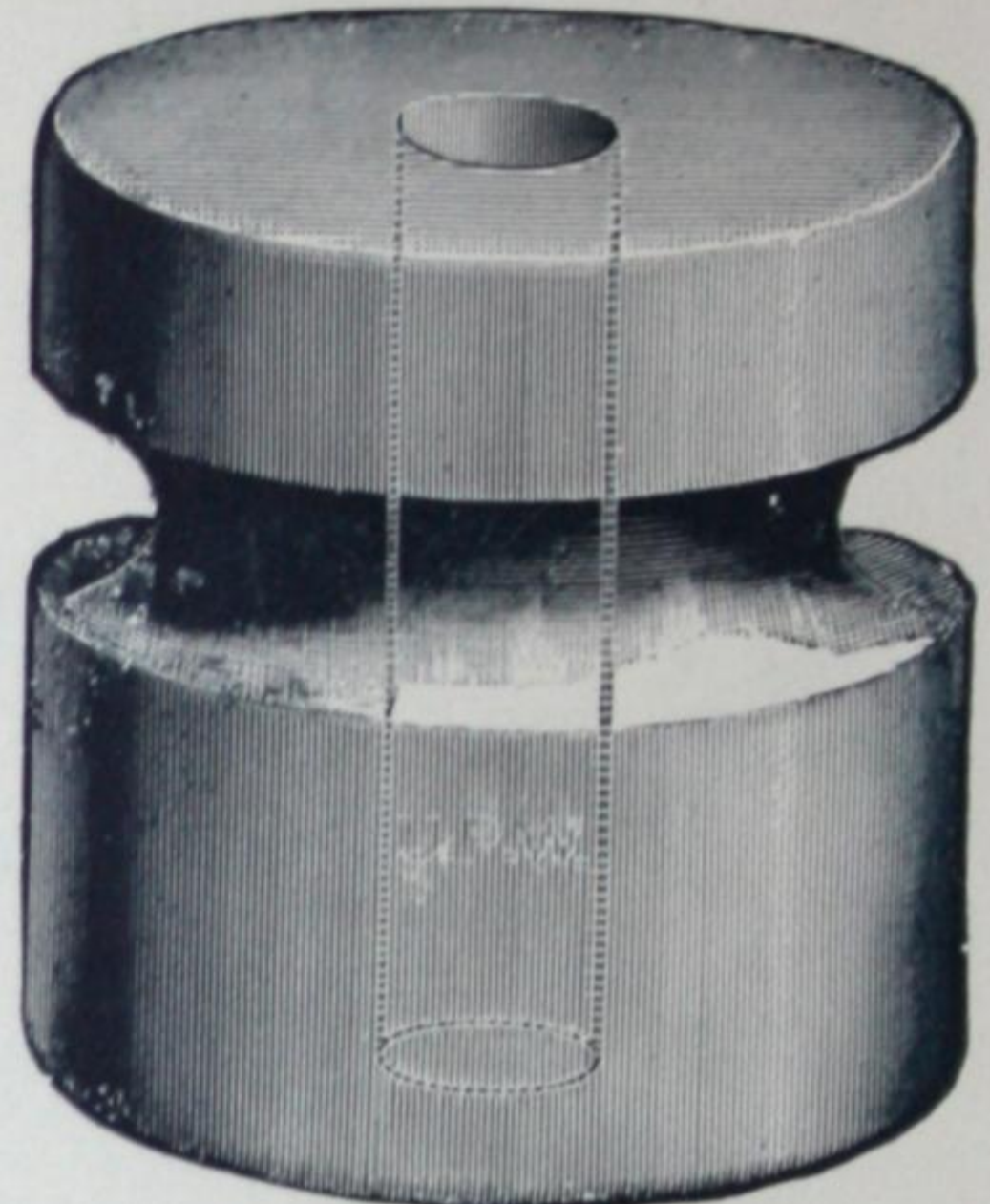
No. 61 Wiring Insulator, price per 1000,
glazed\$22 00
unglazed 14 00

Porcelain Insulators, Etc.

(FULL SIZE.)



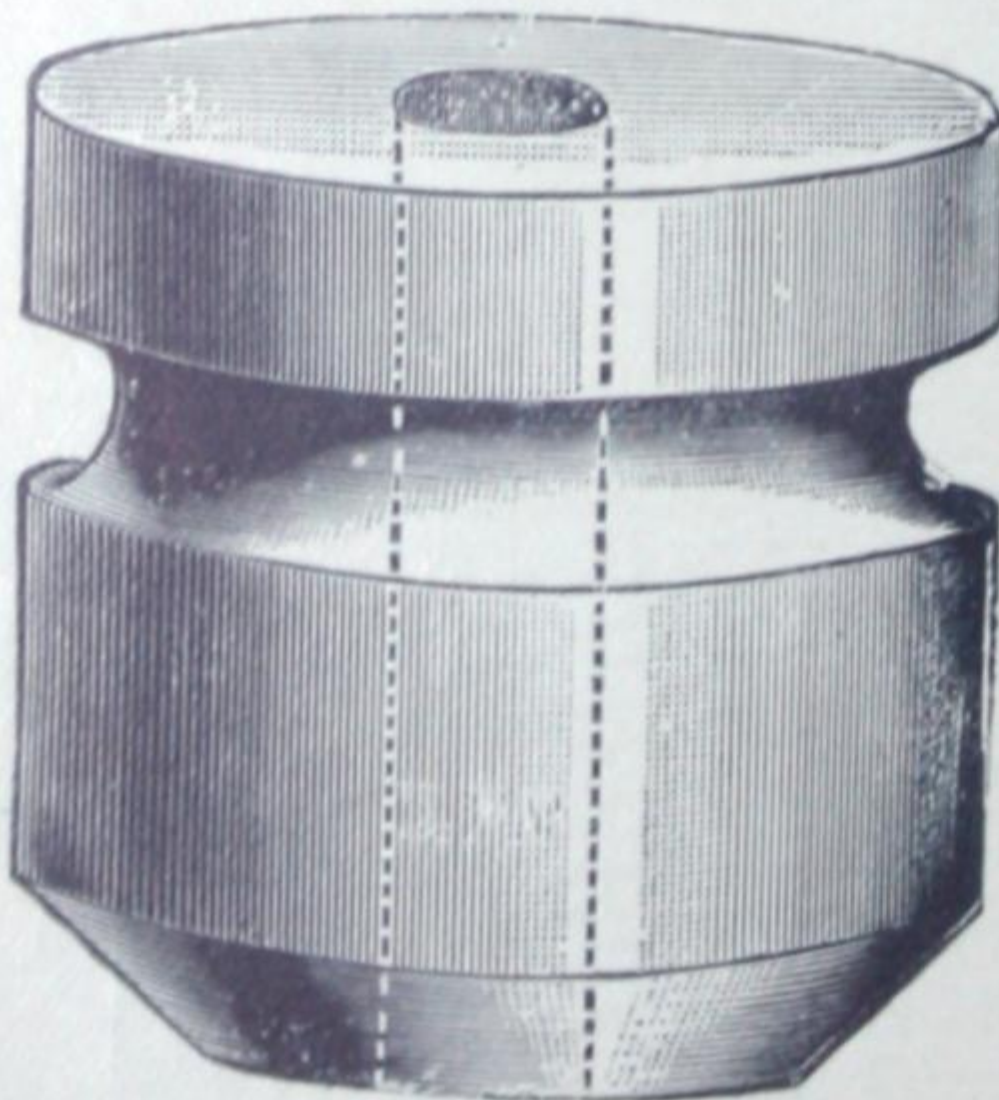
No. 1.



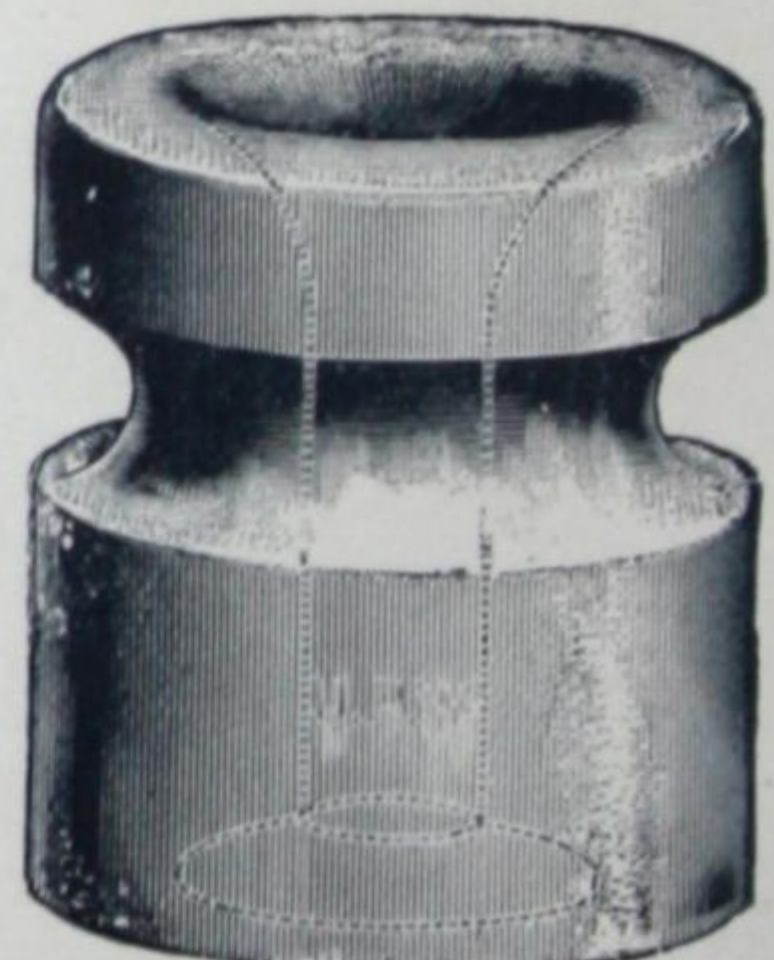
No. 2.

Porcelain Insulator for Large Wire.

No. 1	Per 1,000	\$40 00	No. 2	Per 1,000,	\$18 00
With 5 Inch Sunk Screw	"	55 00	With Round Head Screw,	"	30 00



No. 3.

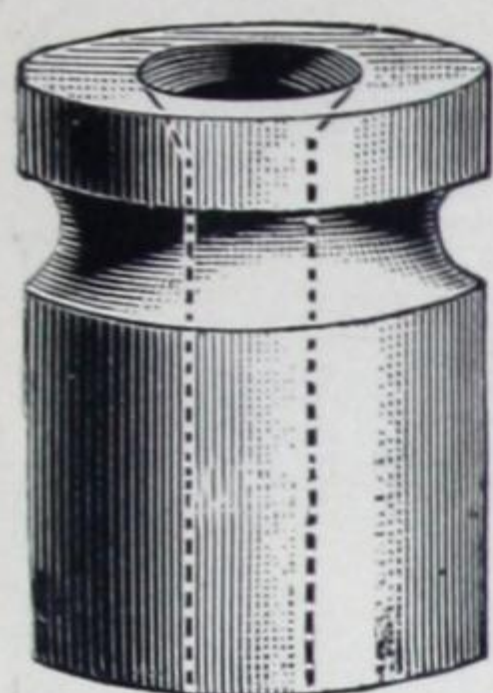


No. 4.

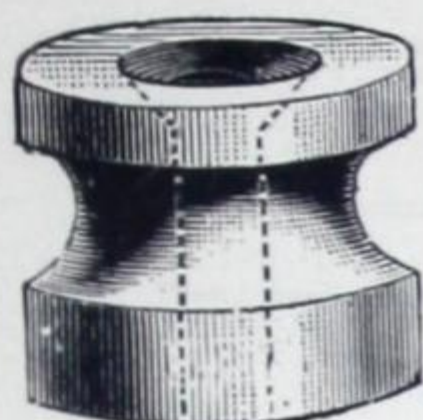
No. 3	Porcelain Insulator for Large Wire	Per 1,000,	\$17 50
"	With Round Head Screw	"	29 50
" 4	Regular Porcelain Insulator (Standard Electric Light Size)	"	8 00
"	With Counter Sunk Screw	"	15 00

Porcelain Insulators, Etc.

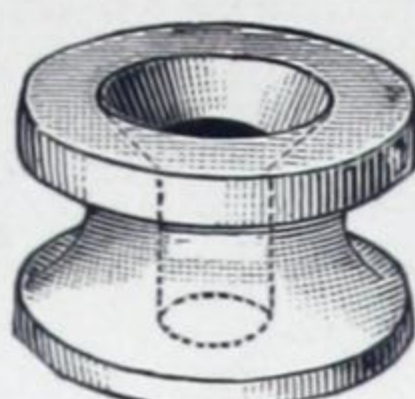
(FULL SIZE.)



No. 5.



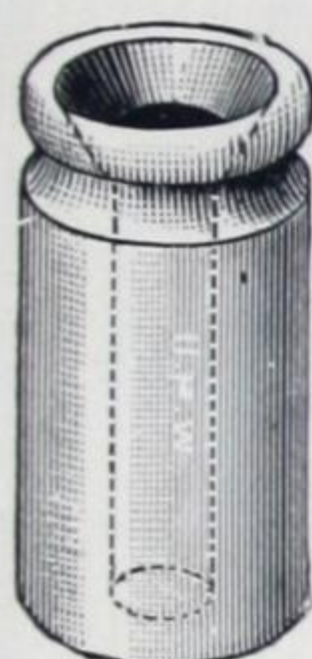
No. 6.



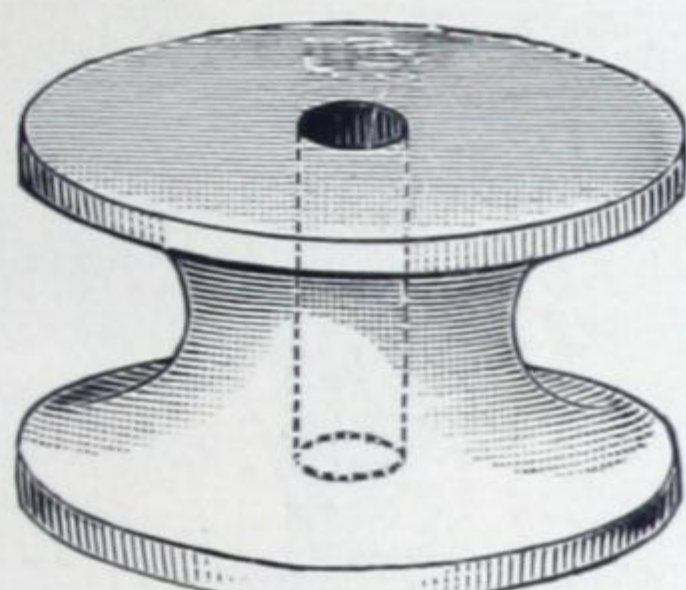
No. 7.



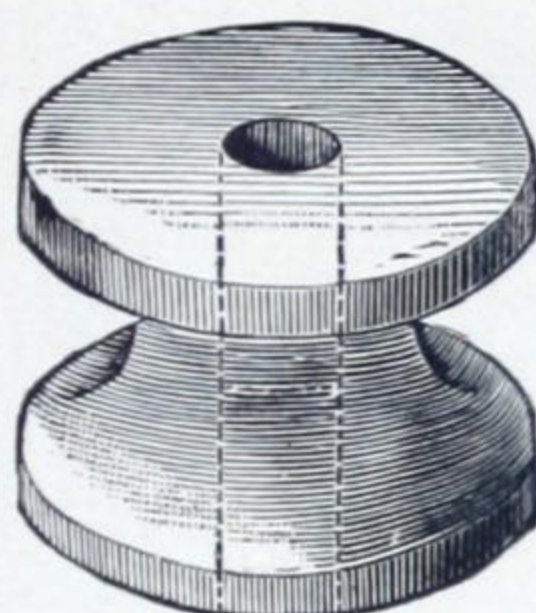
No. 8.



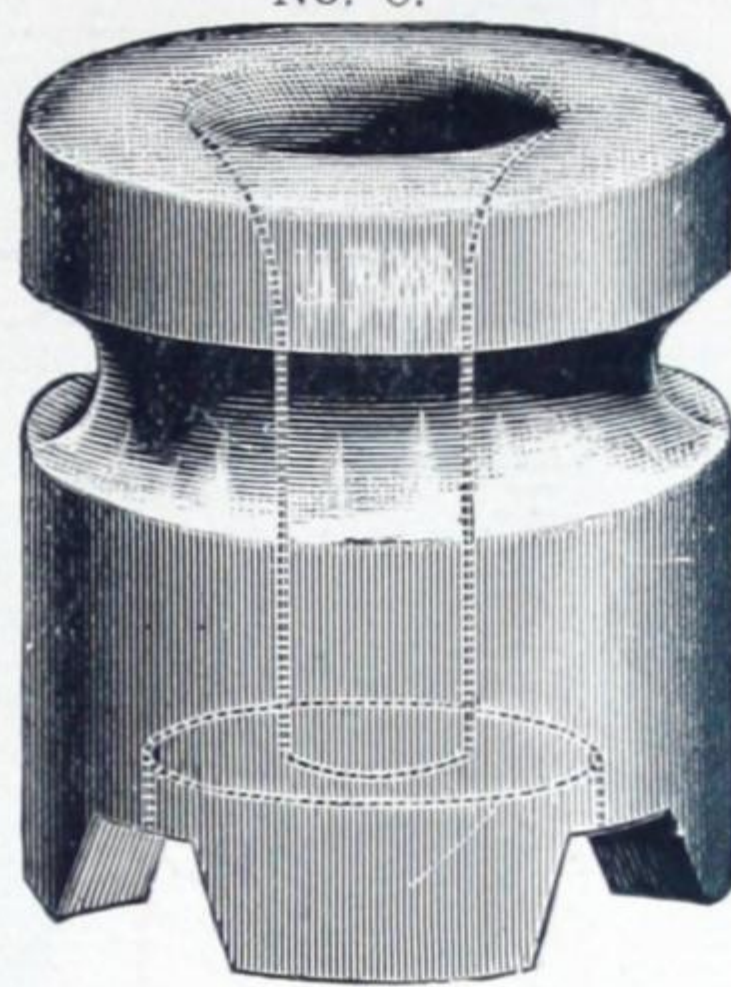
No. 9.



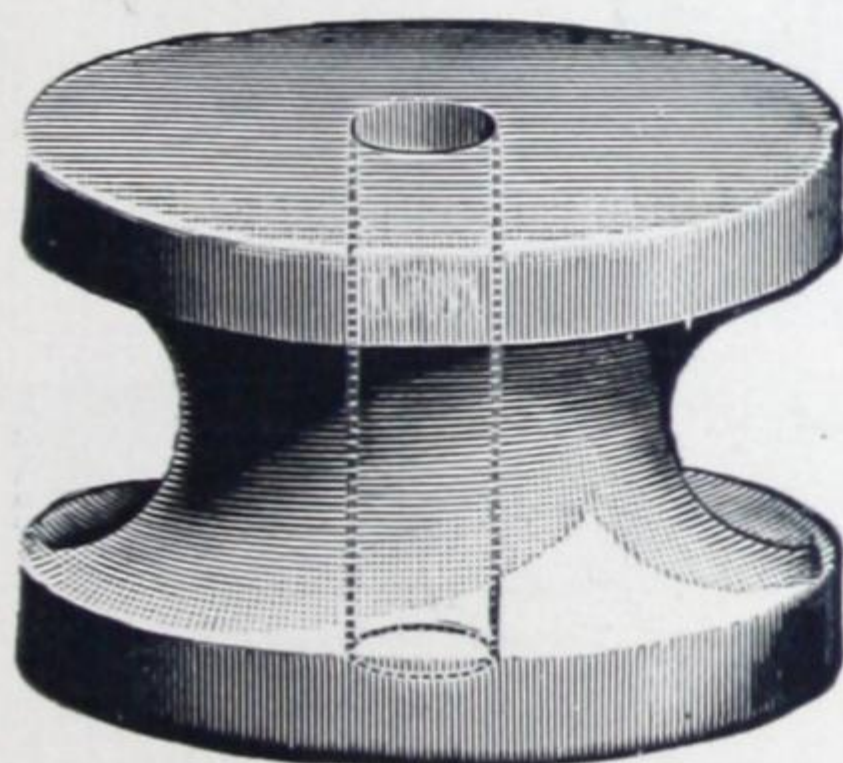
No. 12.



No. 11.



No. 10.



No. 13.



No. 15.

Small Porcelain Insulators.

(For Incandescent, Etc.)

No. 5	Per 1,000, \$5 00	No. 8	Per 1,000, \$3 00
" 6	" 3 00	" 9	" 4 00
" 7	" 3 00		

Screws for any of above Insulators..... 5 00

HIGH INSULATION PORCELAIN.

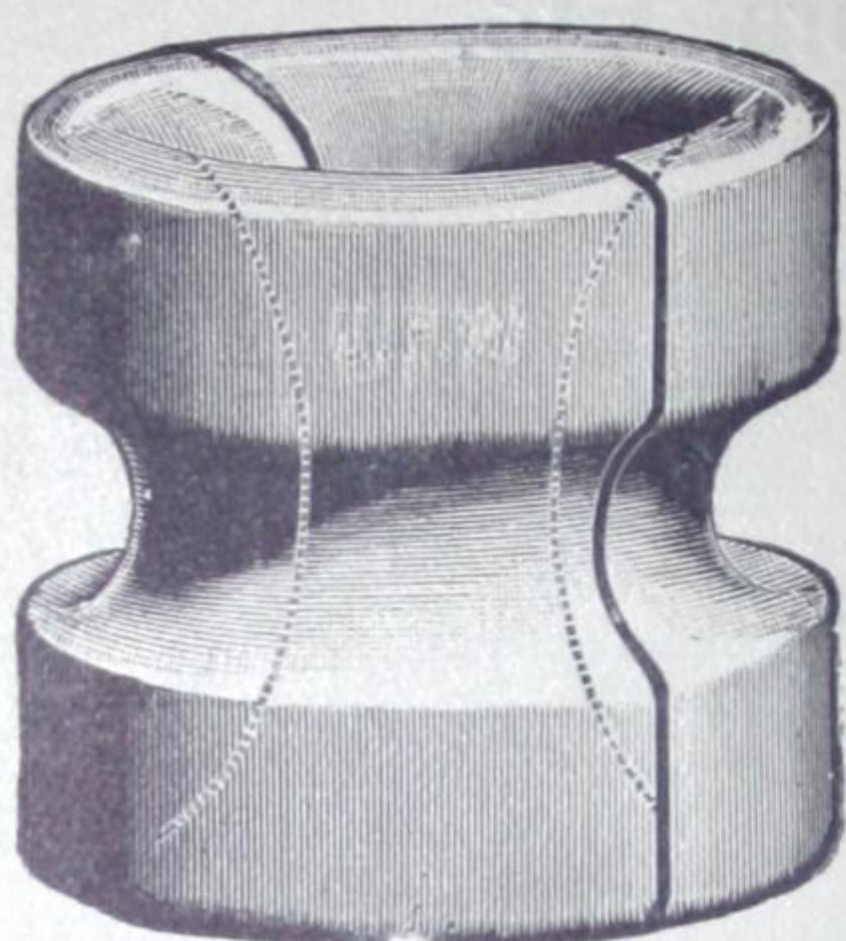
No. 10	"	10 00
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PORCELAINS FOR LOOP CIRCUIT BREAKERS.

" 11	Per 1,000, \$4 20	No. 13	Per 1,000, 11 00
" 12	" 7 50	" 15	" 12 00

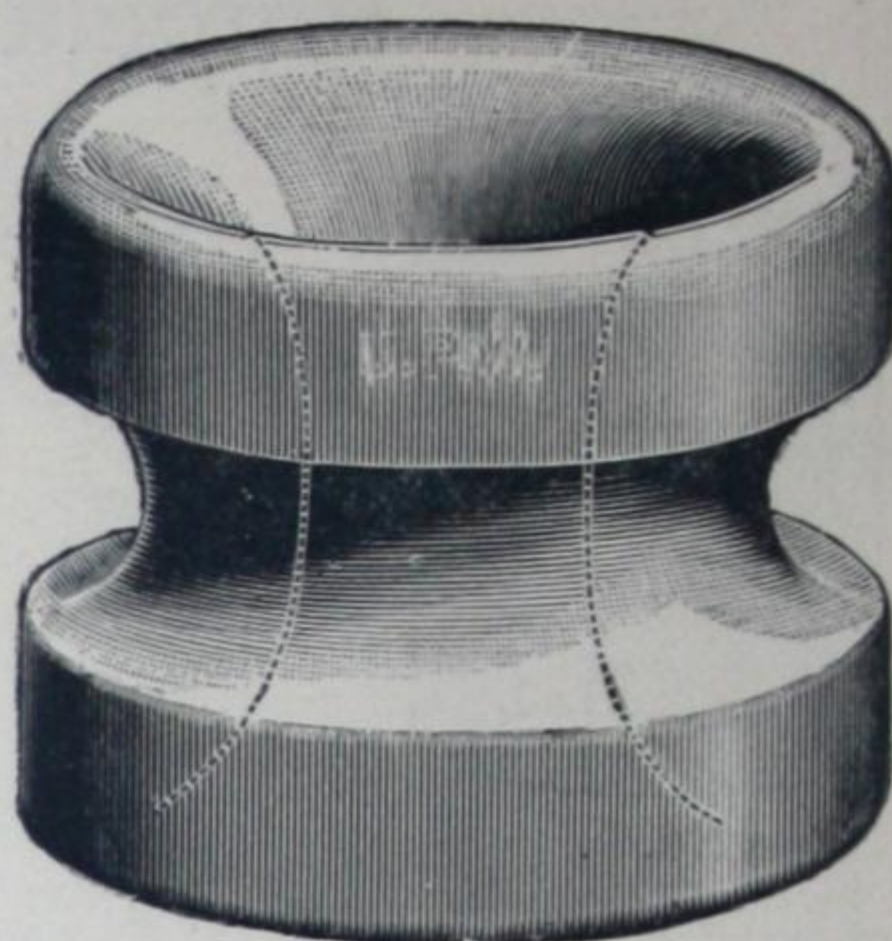
Porcelain Insulators, Etc.

(FULL SIZE.)

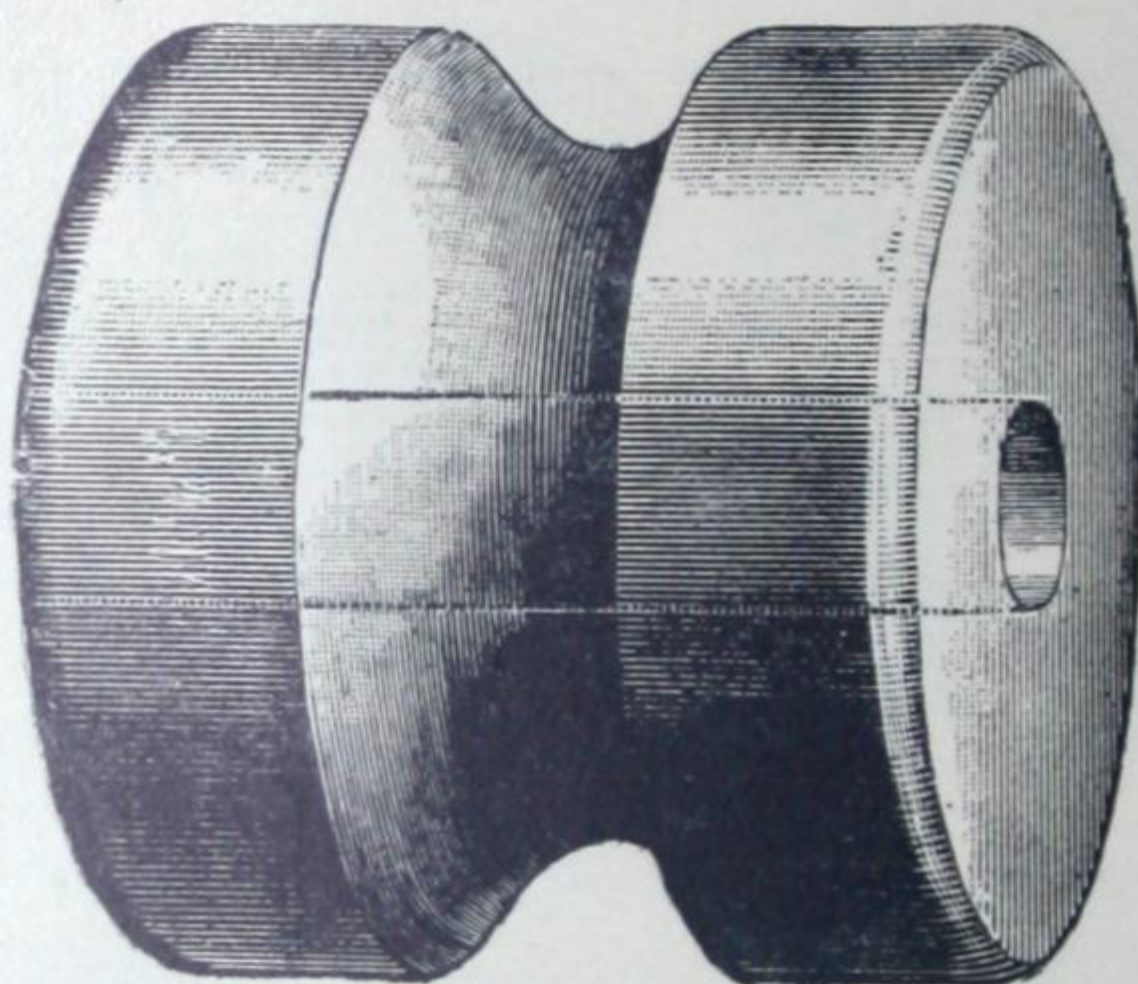


No. 37.

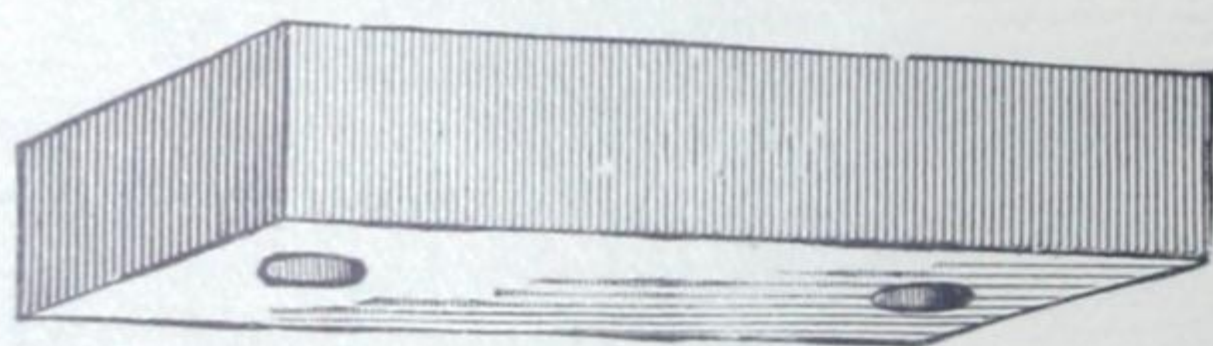
(Also used for Tree Insulator.)



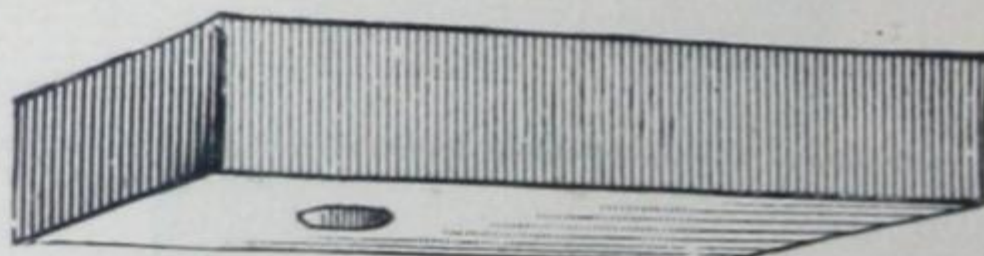
No. 36.



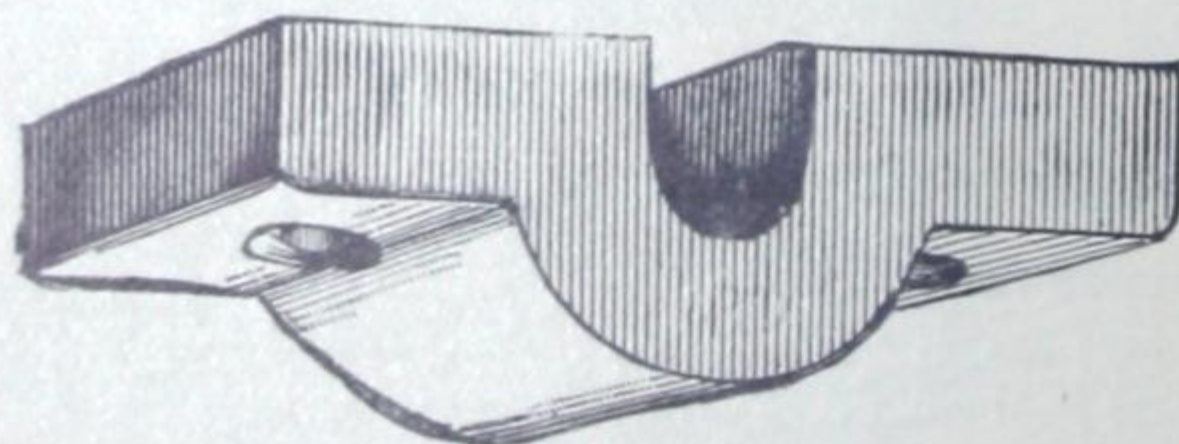
No. 24.



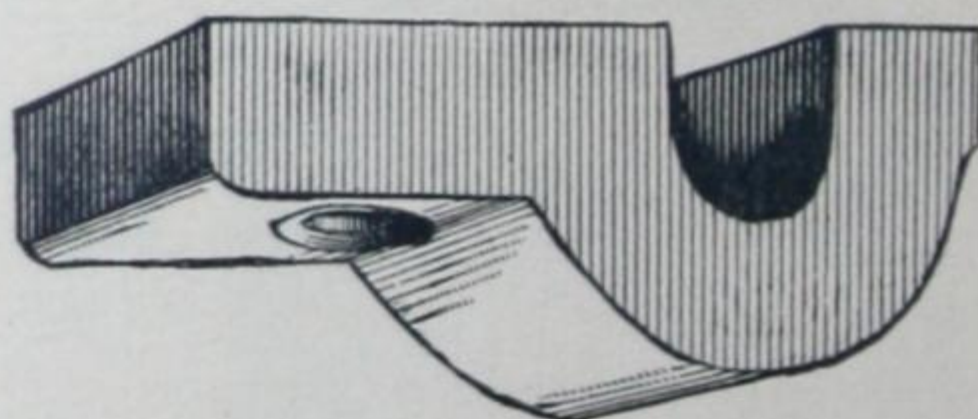
No. 18. (Base for 19.)



No. 20. (Base for 21.)



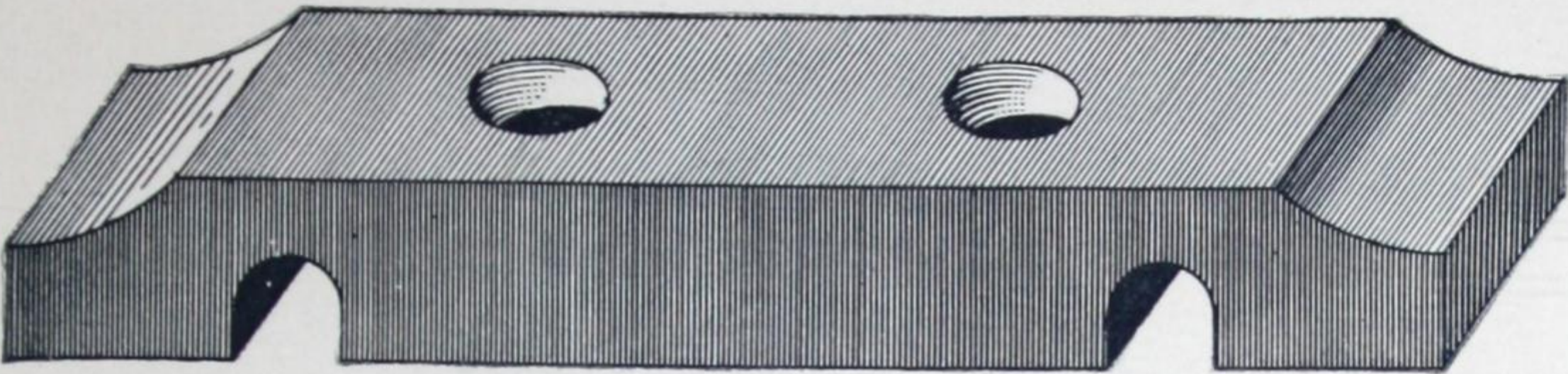
No. 19.



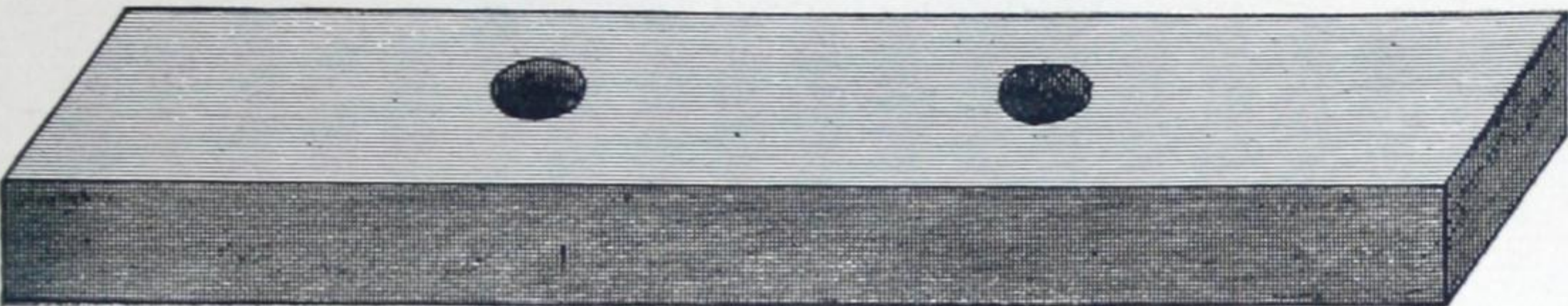
No. 21.

No. 24	Porcelain Circuit Breaker for Heavy Work. (Not shown.)	Per 1,000, \$17 50
" 36	" " " (Standard Electric Light Size)	" 12 00
" 37	" " " or Tree Insulator (Split 2 pieces)	" 24 00
" 18	Cleat, Base	" 6 30
" 19	" " Sold without Base if desired	" 7 60
" 20	" " Base	" 4 70
" 21	" " Sold without Base if desired	" 6 00
Screws for Cleats, Extra		" 3 00

Porcelain Cleats.

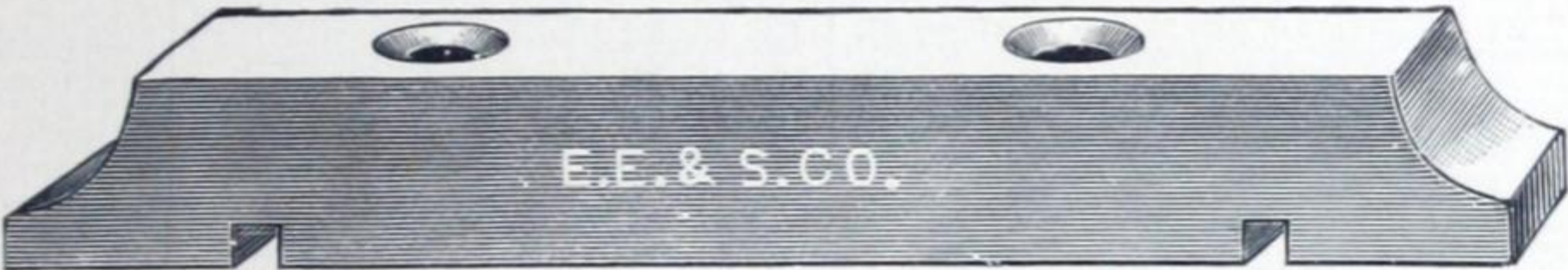


No. 202	Porcelain Cleats,	$\frac{3}{16}$	Wire Groove	
" 203	"	$\frac{1}{4}$	"	
" 204	"	$\frac{5}{16}$	"	
" 205	"	$\frac{3}{8}$	"	



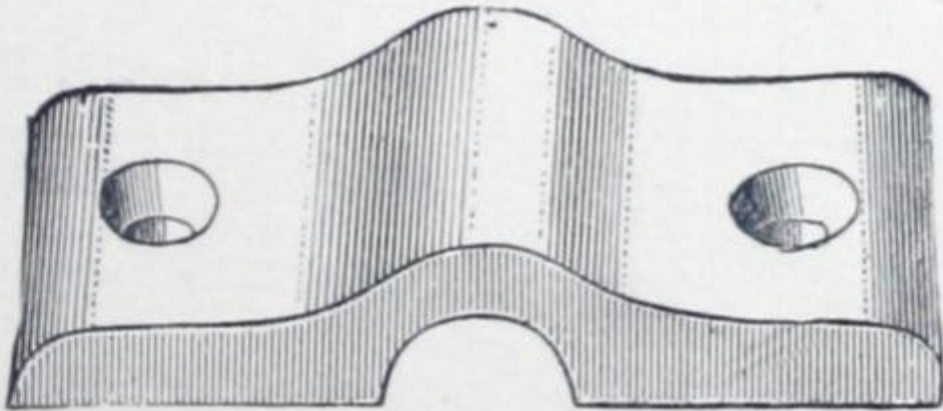
No. 206	Porcelain Base for Wire Cleats	
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Wood Cleats, Double and Single.



Double.

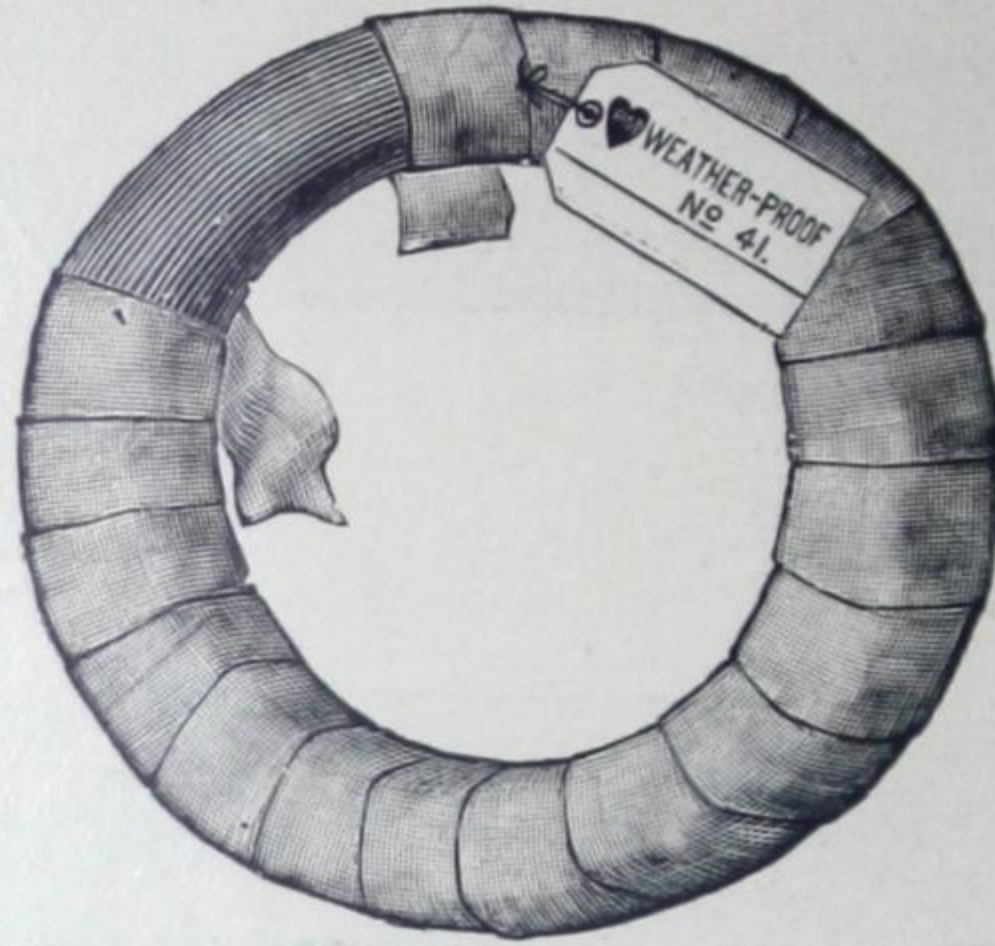
For Nos. 00 to 5	Insulated Wire	Price per 1,000	\$6 00
" " 6 " 7	"	"	5 00
" " 8 " 15	"	"	5 00
" " 16 " 20	"	"	5 00



Single.

For Nos. 00 to 5	Insulated Wire	Price per 1,000	\$5 00
" " 6 " 8	"	"	4 00
" " 10 " 12	"	"	3 00
" " 14 " 16	"	"	3 00

Weather-Proof Line Wire.



Weather-Proof Line Wire.

B. & S. G.	Price per pound.	B. & S. G.	Price per pound.
0000 to 8,	-----	13 to 14,	-----
9 " 10,	-----	15 " 16,	-----
11 " 12,	-----	17 " 18,	-----
	\$0.30		\$0.33 1/2
	.31		.34 1/2
	.32		.36 1/2

B. & S. G.	APPROXIMATE WEIGHT INSULATED.		Feet per Pound.	B. & S. G.	APPROXIMATE WEIGHT INSULATED.		Feet per Pound.
	Per Mile.	Per 1,000 Feet.			Per Mile.	Per 1,000 Feet.	
0000	-----	-----	-----	9	-----	-----	-----
000	-----	-----	-----	10	241 lbs.	45 lbs.	22.22
00	2,425 lbs.	459 lbs.	2.18	11	-----	-----	-----
0	1,895 "	359 "	2.78	12	146 lbs.	27 lbs.	37.04
1	1,491 "	282 "	3.54	13	-----	-----	-----
2	1,180 "	223 "	4.48	14	100 lbs.	19 lbs.	52.63
3	940 "	178 "	5.62	15	-----	-----	-----
4	758 "	143 "	6.99	16	65 lbs.	12 lbs.	83.33
5	620 "	117 "	8.54	17	-----	-----	-----
6	505 "	95 "	10.52	18	43 lbs.	8 lbs.	125.00
7	415 "	78 "	12.82	19	-----	-----	-----
8	344 "	65 "	15.38	20	-----	-----	-----

Also Made in 3 and 4 Braid if Desired. Special Prices for Extra Weight of Insulation Quoted on Application.

Underwriters' Line Wire.



Underwriters' Line Wire.

No.	Diameter Bare Wire.	Approximate Weight 1,000 Feet Insulated.	Price per Pound.	No.	Diameter Bare Wire.	Approximate Weight of 1,000 Feet Insulated	Price Per Pound.
0000	.460	750 lbs.	\$0.29	10	.10189	53 lbs.	\$0.30
000	.40964	560 "	.29	11	.09074	36 "	.31
00	.36480	500 "	.29	12	.08081	30 "	.31
0	.32495	386 "	.29	13	.07196	25 "	.32½
1	.28930	315 "	.29	14	.06408	21 "	.32½
2	.25763	246 "	.29	15	.05706	16 "	.33½
3	.22942	195 "	.29	16	.05082	14 "	.33½
4	.20431	150 "	.29	17	.04525	13 "	.35½
5	.18194	125 "	.29	18	.04030	12 "	.35½
6	.16202	100 "	.29	19	.03589	11 "	--
7	.14428	84 "	.29	20	.03196	10 "	--
8	.12949	74 "	.29	22	.025347	6 "	--
9	.11443	55 "	.30	24	.0201	5 "	--

Furnished on reels from No. 2 to No. 9. of about 180 lbs., or in coils of 150 lbs. or less.

For reels we charge \$2.00 each extra, and will allow the full amount charged when returned to our factory at Ansonia, Conn., in good order and without expense to us. Any arrangement about the delivery of wire does not affect the returning of the reels.

Grimshaw White Core, Taped.

"B. D." (BRAIDED) INSULATION. With Solid Copper Conductors.

Please use Trade Number in ordering. Reels at cost. Discount -----per cent. All wires used by us are drawn true to Gauge, and are of the highest conductivity and uniform tensile strength.



All orders, when Gauge is not mentioned, will be filled in Brown & Sharp Gauge. Prices subject to change without notice.

Price Per 100 Feet.

Trade No.	Brown & Sharp Gauge.	Outside Diameter, of Insulation .001 inch.	Grimshaw, White Core, Taped.	Trade No.	B. D. Wire Braided.	With Fire-proof Covering per 100 feet.	Safe Carrying Capacity, Bare Wire, in Amperes 120° F.	Circular Mils. (d²) 1 Mil. = .001 inch.
220	18	.125	\$ 1.90	320	\$ 1.65	\$ 1.80	6	1624.3
221	18	.156	2.00	321	1.75	1.90		
222	18	.187	2.10	322	1.85	2.00		
223	16	.125	2.15	323	1.75	1.85	10	2582.9
234	16	.156	2.20	324	1.85	2.00		
225	16	.187	2.30	325	1.90	2.10		
226	16	.218	2.45	326	2.00	2.20		
227	14	.156	---	327	2.10	2.30	15	4106.8
228	14	.187	2.70	328	2.30	2.50		
229	14	.218	3.00	329	2.55	2.80		
230	14	.250	3.50	330	3.25	3.55		
231	12	.218	3.50	331	3.25	3.55	21	6529.9
232	12	.250	3.70	332	3.55	3.90		
233	12	.281	4.00	333	3.85	4.20		
234	10	.218	---	334	4.00	4.40	32	10381.
235	10	.250	4.50	335	4.10	4.50		
236	10	.281	5.00	336	4.50	4.90		
237	8	.281	5.50	337	4.75	5.20	44	16509.
238	8	.343	6.50	338	5.75	6.30		
239	6	.343	8.25	339	6.50	7.15	60	26250.5
240	6	.406	9.50	340	8.40	9.20		
241	5	.406	9.90	341	8.90	9.80	68	33102.
242	5	.468	10.25	342	9.50	10.45		
243	4	.406	10.50	343	9.60	10.55	83	41742.
244	4	.468	12.50	344	11.50	12.65		
245	3	.468	13.50	345	12.00	13.20	104	52634.
245½	3	.531	15.00	346	13.50	14.85		
246	2	.507	16.50	347	15.50	16.00	118	66373.
246½	2	.562	18.00	348	17.00	17.50		
247	1	.531	22.00	349	20.00	21.00	135	83694.2
247½	1	.593	24.00	350	22.00	23.00		
248	0	.562	29.00	351	28.00	28.50	179	105592.5
248½	0	.625	32.50	352	31.00	32.00		

Stranded Wires.

Grimshaw

White Core Taped and B. D. Braided.

Price List Per 100 Feet.

Trade No.	Brown & Sharp Gauge.	Outside Diameter of Insulation.	Grimshaw White Core.	Trade No.	B. & D. Braided.	With Fire-Proof Covering.	Safe Carrying Capacity Bare Wire, in Amperes 120° F.	Circular Mils. (d²) 1 Mil. .001 inch.
704	8	.375	\$8 00	804	\$6 25	\$ 6 85	44	16509.
705	6	.375	9 50	805	7 75	8 50	60	26250.5
706	6	.437	11 00	806	9 00	9 90		
707	5	.461	12 00	807	9 75	10 72	68	33102.
708	4	.461	14 50	808	12 00	12 60	83	41742.
709	4	.523	16 00	809	15 00	15 75		
710	3	.483	18 00	810	16 60	17 40	104	52634.
711	3	.545	19 50	811	18 00	18 90		
712	2	.539	20 00	812	19 00	19 95	118	66373.
713	2	.601	23 00	813	22 00	22 75		
714	1	.544	27 00	814	26 00	26 75	135	83694.2
715	1	.606	30 00	815	29 00	29 75		
716	0	.623	32 00	816	30 25	31 75	179	105592.5
717	0	.685	37 50	817	34 00	35 70		
718	00	.677	40 00	818	38 50	39 50	210	133079.4
719	00	.739	45 00	819	43 50	44 50		
720	000	.729	50 00	820	45 00	46 50	251	167805.
721	000	.791	55 00	821	50 00	51 50		
722	0000	.749	60 00	822	57 50	59 00	275	211600.
723	0000	.811	65 00	823	62 50	63 00		

B. D. Braided Switch Board Cables.

Price List.

Trade No.	Brown & Sharp Gauge.	Outside Diameter.	Price per 100 Feet.	Trade No.	Brown & Sharp Gauge.	Outside Diameter.	Price per 100 Feet.
1,100	8	.375	\$ 6.90	1,106	4	.461	\$13.25
1,101	8	.437	9.00	1,107	4	.523	16.25
1,102	6	.437	9.00	1,108	3	.483	18.00
1,103	6	.461	11.00	1,109	3	.545	20.00
1,104	5	.461	12.25	1,110	2	.539	22.00
1,105	5	.500	15.00	1,111	2	.601	25.00

Please use Trade Number in ordering. Reels at cost. These Cables are made up of flexible copper wires, being carefully tinned, then covered with B. D compound, one braid and slicker.

Duplex Fixture Wire and Tape.



This Wire is made especially for Electroliers, enabling two wires to be run with same labor as one formerly. Perfectly safe and reliable, and made to fit all Electroliers. By inwrapping tape, wires can be easily separated.

PRICE LIST.

Trade No.	Brown & Sharp Gauge.	Carrying Capacity, Each Conductor.	Outside Diameter.	Price per 100 Feet.
1,200	14	15	.218	\$5.00
1,201	16	10	.218	4.50
1,202	18	6	.218	4.00

Please Use Trade Number in Ordering.

Tape.

GRIMSHAW TAPE.

White,-----	Per Pound, \$1.00
Black,-----	" 1.10

ELEPHANT TAPE.

Red, White, or Black,-----	" 1.00
Grimshaw Splicing Compound,-----	" 1.00

Magnet Wire.



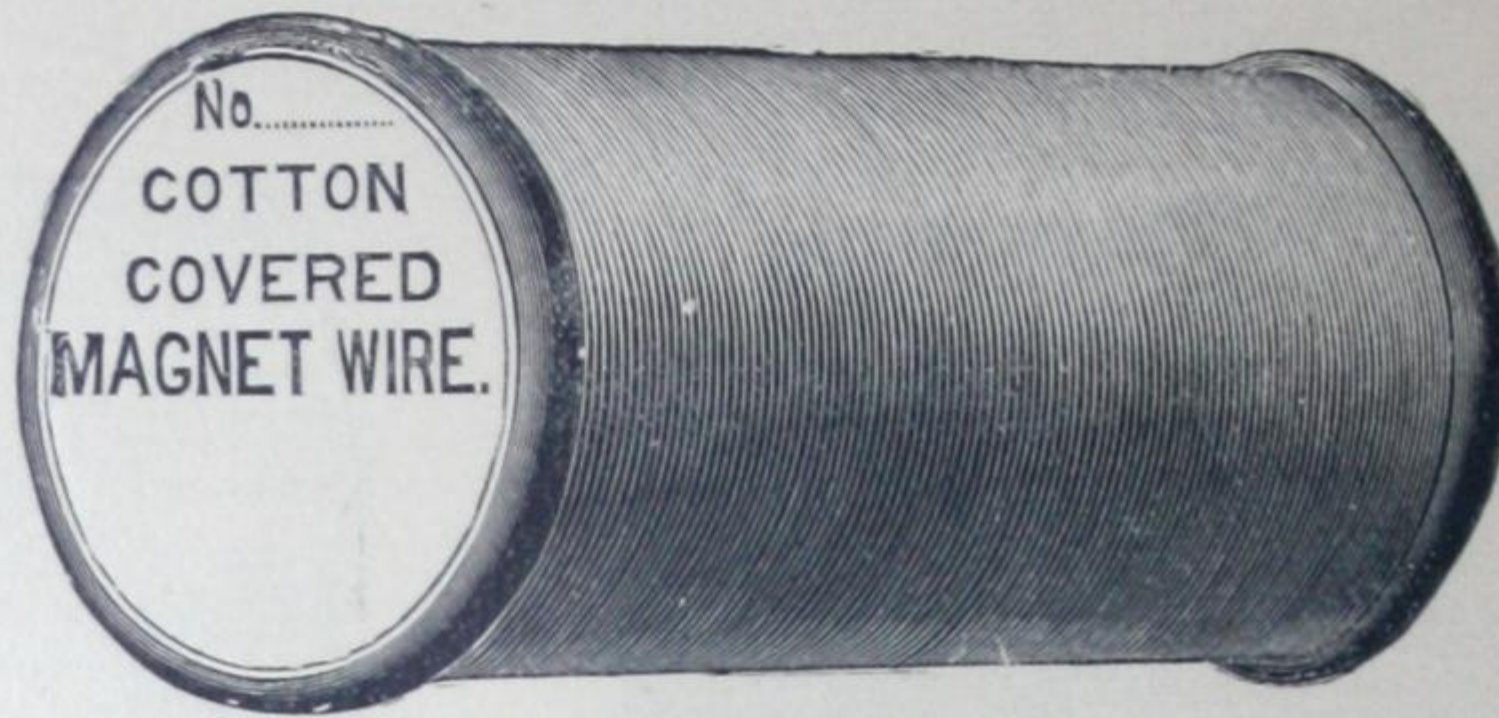
Cotton-Wound to No. 20, B. & S. Gauge.

No.	Diameter Bare Wire.	Single.	Double.	Triple.	Quadruple.
4	.20431	\$0.40	\$0.42	\$0.48	\$0.51
5	.18194	41	43	49	52
6	.16202	41	43	49	52
7	.14428	42	44	50	53
8	.12849	42	44	50	53
9	.11443	43	45	51	54
10	.10189	43	45	51	54
11	.09074	44	46	52	55
12	.08081	45	47	53	56
13	.07196	46	49	55	58
14	.06408	47	50	56	59
15	.05706	48	51	57	60
16	.05082	49	52	58	61
17	.04525	50	53	60	64
18	.04030	51	54	62	68
19	.03589	54	58	66	72
20	.03196	55	60	68	75

Our stock consists of single and double wound only, and ordinarily in coils. For customers requesting it we will carry a stock on reels of any sizes desired.

On reels to No. 15, in continuous lengths of about 150 lbs each, or in coils of about 50 lbs each. For reels and cases we charge \$2.50 each, and will allow the full amount charged when returned to our factory at Ansonia, Conn., in good order and without expense to us. Any arrangement about the delivery of wire does not affect the returning of the reels.

Magnet Wire.



WHITE.

Cotton Wound, Finer than 20 B. & S. Gauge.

No.	Diameter Bare Wire.	SINGLE.				DOUBLE.			
		Regular Spools Per Pound	1 Pound Spools, Per Pound	4 Ounce Spools Per Ounce	1 Ounce Spools Per Ounce	Regular Spools Per Pound	1 Pound Spools Per Pound	4 Ounce Spools Per Ounce	1 Ounce Spools Per Ounce
21	.02846	\$0.70	\$0.80	\$0.06	\$0.07½	\$0.88	\$0.98	\$0.07½	\$0.09
22	.025347	.76	.86	.06½	.08	.95	1.05	.08	.09½
23	.022571	.83	.93	.07	.08½	1.05	1.15	.08½	.10
24	.0201	.90	1.00	.07½	.09	1.14	1.24	.09	.10½
25	.0179	1.00	1.10	.08	.09½	1.27	1.37	.10	.11½
26	.01594	1.10	1.20	.09	.10½	1.38	1.48	.10½	.12
27	.014195	1.25	1.35	.09½	.11	1.57	1.67	.12	.13½
28	.012641	1.35	1.45	.10½	.12	1.69	1.79	.12½	.14
29	.011257	1.50	1.60	.11½	.13	1.89	2.00	.14	.15½
30	.010025	1.65	1.75	.12	.14	2.07	2.17	.15	.17
31	.008928	1.80	1.90	.13	.15	2.23	2.33	.16	.18
32	.00795	2.25	2.35	.16	.18	2.62	2.72	.18½	.20½
33	.00708	2.76	2.86	.19	.21	3.28	3.38	.22½	.24½
34	.0063	3.28	3.38	.23	.25	3.93	4.03	.27	.29
35	.00561	3.74	3.84	.25	.27	4.46	4.56	.30	.32
36	.005	5.04	5.14	.34	.36	5.67	5.77	.38	.40

Unless otherwise ordered the above will be furnished on spools, as follows:

Nos. 21 to 24, on 4½ inch spools, containing about 9 pounds.

" 25 " 29, " 3½ " " " 4 "

" 30 and finer, 2½ " " " 2 "

In stock, single wound, white, Nos. 21 to 34 on regular spools; also, Nos. 21 to 30 on 1 lb. spools; 26 to 32 on ¼ lb. spools; 30 to 34 on 1 oz. spools.

Double wound, finer than No. 20, and green cotton wound, furnished to order only.

Magnet Wire.

White or Green, B. & S. Gauge.



Silk Wound.

No.	Diameter. Bare Wire.	SINGLE.				DOUBLE.			
		Regular Spools, Per Pound.	1 Pound Spools, Per Pound.	4 Ounce Spools Per Ounce.	1 Ounce Spools, Per Ounce.	Regular Spools, Per Pound.	1 Pound Spools, Per Pound.	4 Ounce Spools Per Ounce.	1 Ounce Spools Per Ounce.
16	.05082	\$ 1.12	\$ 1.22	\$0.09	\$0.10	\$ 1.53	\$ 1.63	\$0.11½	\$0.12½
17	.04525	1.12	1.22	.09	.10	1.53	1.63	.11½	.12½
18	.04030	1.15	1.25	.09	.10	1.57	1.67	.12	.13
19	.03589	1.15	1.25	.09	.10	1.57	1.67	.12	.13
20	.03196	1.18	1.28	.09½	.10½	1.61	1.71	.12½	.13½
21	.02846	1.20	1.30	.09½	.10½	1.63	1.73	.12½	.13½
22	.025347	1.30	1.40	.10	.11½	1.76	1.86	.13	.14
23	.022571	1.42	1.52	.10	.11½	1.93	2.13	.15	.16
24	.0201	1.56	1.66	.12	.13½	2.13	2.23	.16	.17
25	.0179	1.81	1.91	.12½	.14½	2.48	2.58	.18	.19
26	.01594	2.10	2.20	.15	.17	2.88	2.98	.20	.22
27	.014195	2.25	2.35	.16	.18	3.07	3.17	.21	.23
28	.012641	2.38	2.48	.17	.19	3.23	3.33	.22	.24
29	.011257	2.75	2.85	.19	.20	3.76	3.86	.26	.28
30	.010025	2.95	3.05	.21	.22	4.02	4.12	.27	.29
31	.008928	3.25	3.35	.23	.24	4.40	4.50	.30	.32
32	.00795	3.96	4.01	.27	.28	5.21	5.31	.35	.37
33	.00708	4.49	4.59	.30	.32	5.87	5.97	.39	.41
34	.0063	4.72	4.82	.32	.33	6.10	6.20	.40	.42
35	.00561	6.72	6.82	.44	.45	8.95	9.05	.58	.60
36	.005	8.05	8.15	.52	.54	10.21	10.31	.66	.68
37	.00445	12.65	12.65	.80	.82	15.67	15.67	1.00	1.02
38	.003965	14.95	14.95	.94	.94	16.67	16.67	1.05	1.05
40	.003144	23.00	23.00	1.66	1.66	26.45	26.45	1.63	1.66

German Silver Wire.

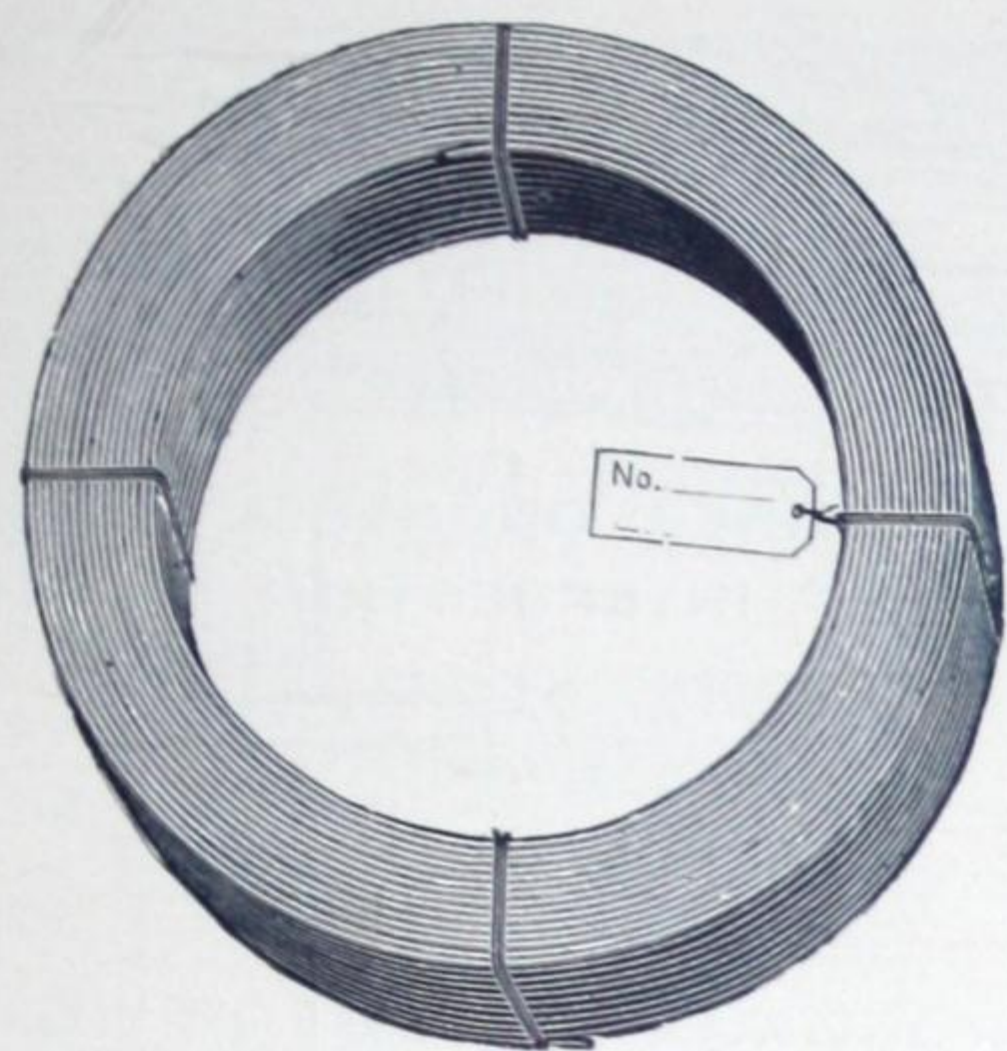
INSULATED FOR RESISTANCE.

18 PER CENT.

No. B. & S. Gauge.	Resistance Ohms, per 1000 ft. 75 deg. Fahr.	WHITE COTTON WOUND.		GREEN SILK WOUND.	
		Single.	Double.	Single.	Double.
16	52.247	\$ 1.40	\$ 1.70	\$ 1.85	\$ 2.38
17	65.884	1.40	1.70	1.85	2.38
18	73.083	1.40	1.70	1.85	2.38
19	107.757	1.40	1.70	1.85	2.38
20	132.08	1.42	1.74	1.88	2.43
21	166.66	1.44	1.75	1.93	2.48
22	209.95	1.52	1.83	2.06	2.64
23	264.94	1.62	1.98	2.21	2.87
24	334.10	1.71	2.09	2.37	3.08
25	421.20	1.84	2.26	2.65	3.48
26	531.31	2.05	2.48	3.02	3.93
27	669.76	2.25	2.73	3.23	4.20
28	884.61	2.45	2.98	3.42	4.43
29	1064.96	2.60	3.13	3.85	5.00
30	1342.90	2.84	3.38	4.14	5.33
31	1654.51	3.09	3.66	4.52	5.81
32	2135.28	4.14	4.84	5.68	7.17
33	2692.04	4.55	5.33	6.27	7.93
34	3395.99	5.31	6.25	6.71	8.38
35	4281.55	5.76	6.55	8.65	10.86
36	5398.12	9.30	10.21	11.50	13.50
37	6808.88	14.95	15.81	21.28	25.30
38	7584.81	27.60	31.05	32.20	38.00
39	10822.24	31.05	34.50	34.50	46.00
40	13646.10	34.50	38.00	51.75	57.50

NOTE.—In stock, double wound, both in cotton and silk, Nos. 26, 30, 33, and 36, on spools of one pound each. Other sizes, or single wound, furnished to order only.

Galvanized Iron and Steel Wire.



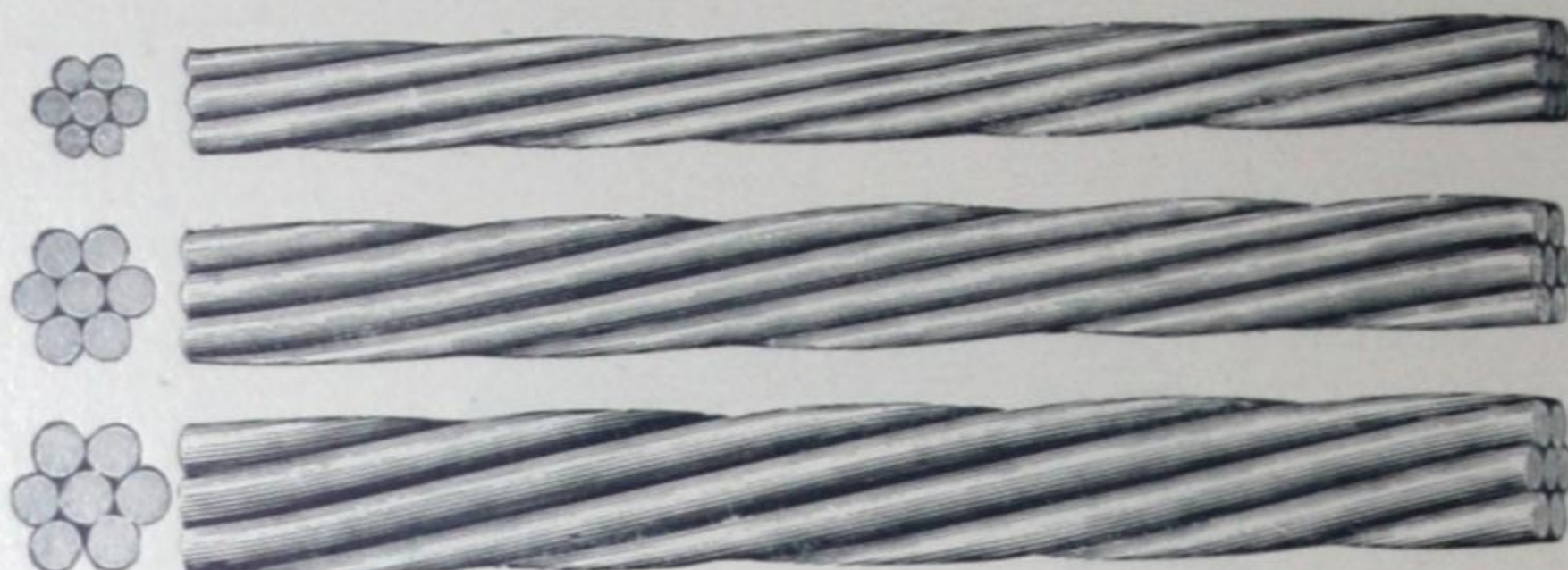
Galvanized Iron Wire.

IRON WIRE GAUGE.

No.	Weight per Mile, pounds.	Resistance per Mile.	Ex. B. B. Cents per pound.	B. B. Cents per pound.	Steel. Cents per pound.	Prices.
4	730	6. ohms.	8	7	--	For quantity upon application.
6	540	10. "	8½	7½	7	
8	388	14.1 "	8½	7½	7	
9	320	16.4 "	8½	7½	7	
10	260	20. "	9	8½	8	
11	216	25. "	9½	9	8	
12	165	32.7 "	10	9½	8½	
14	98	52.8 "	12	11½	11	
16	62	91.6 "	15	14½	14	

No Discount for Quantities Less Than One Bundle.

Galvanized Signal Strand.



FOR CROSS SUSPENSION WIRES ON STREET RAILWAY AND HANGING
ARC LAMPS AT INTERSECTION OF STREETS.

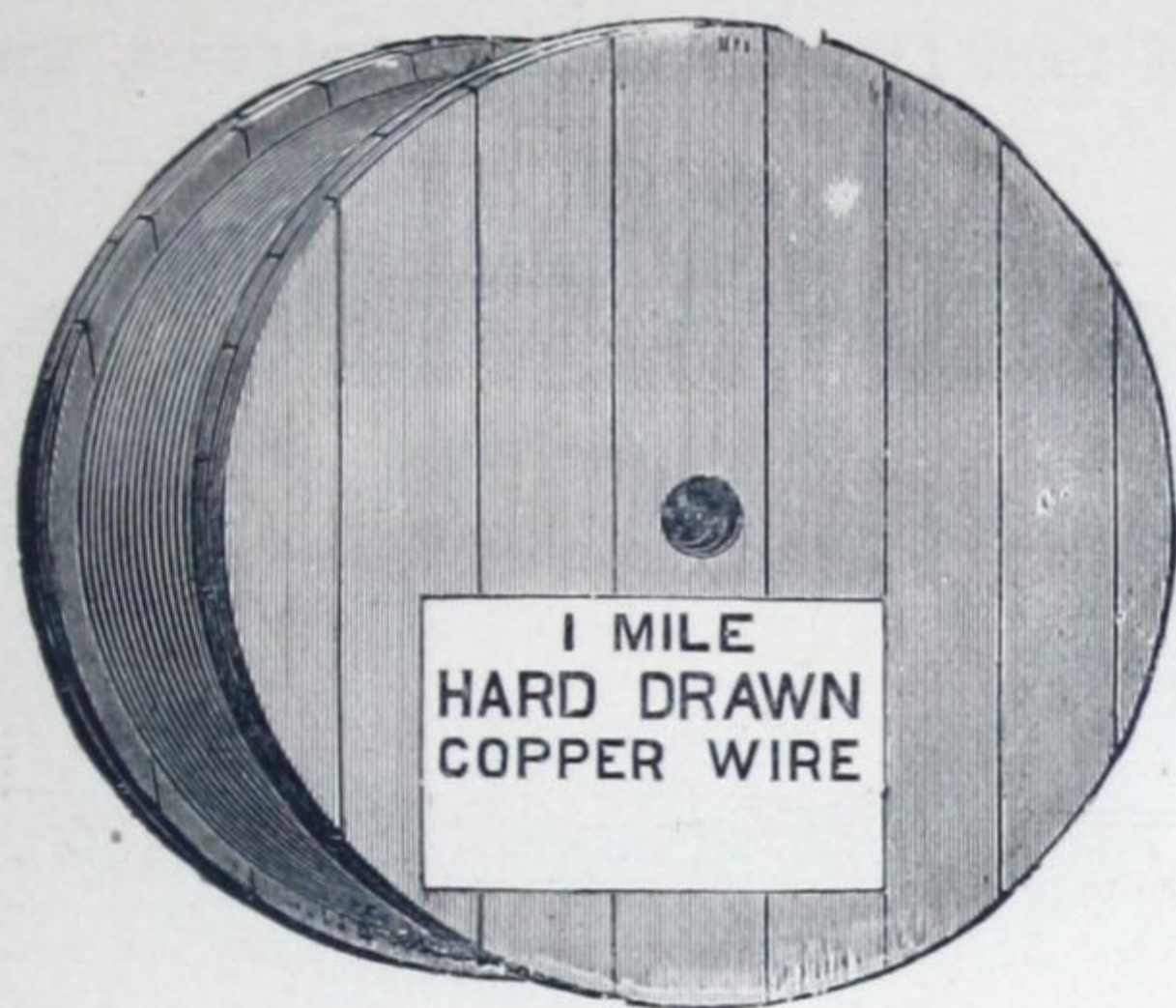
Seven Wires, No.-----	8	9	10	11	12	13	14
Weight per 1000 ft., lbs -----	500	417	348	275	210	160	122
Diameter, Inches-----	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{13}{32}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{9}{32}$	$\frac{1}{4}$
Breaking Strain, (lbs)-----	9000	7500	6200	5000	3700	2900	2200
Price per lb (cts)-----	10	11	11	11	11½	12	12½

Seven Wires, No.-----	15	16	17	18	19	20	21
Weight per 1000 ft., lbs -----	98	75	56	42	32	23	20
Diameter, Inches-----	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Breaking Strain, (lbs)-----	1900	1500	1100	800	650	500	400
Price per lb, (cts)-----	13	14	15	16	17	18	19

Two Strand Wire.

FURNISHED UPON APPLICATION AT MARKET PRICES.

Hard Drawn Copper Wire and Bars.



Hard Drawn Copper Wire.

& S. Gauge.	Resistance per Mile.	Weight per 1,000 Feet.	Weight per Mile.	Price.
No. 12	-----	19.8	105 Pounds.	30 Cents per Pound.
" 13	-----	15.7	83 "	30 " "
" 14	-----	12.5	66 "	30 " "
" 15	-----	10.0	53 "	31 " "
" 16	-----	7.95	42 "	31 " "

We make a specialty of Hard-Drawn Copper Wire for Electric Railway Work, which we can furnish on drums containing continuous lengths of from one-half to two miles.

Prices Quoted on Application.

Copper Bars.

FOR CENTRAL STATION USE.

Round.

Size, -----	$\frac{1}{2}$ in.	$\frac{9}{16}$ in.	$\frac{5}{8}$ in.
Weight per Foot, -----	.756 lbs.	.957 lbs.	1.182 lbs.
Price per Pound, -----	\$0.40.	\$0.40.	\$0.40.

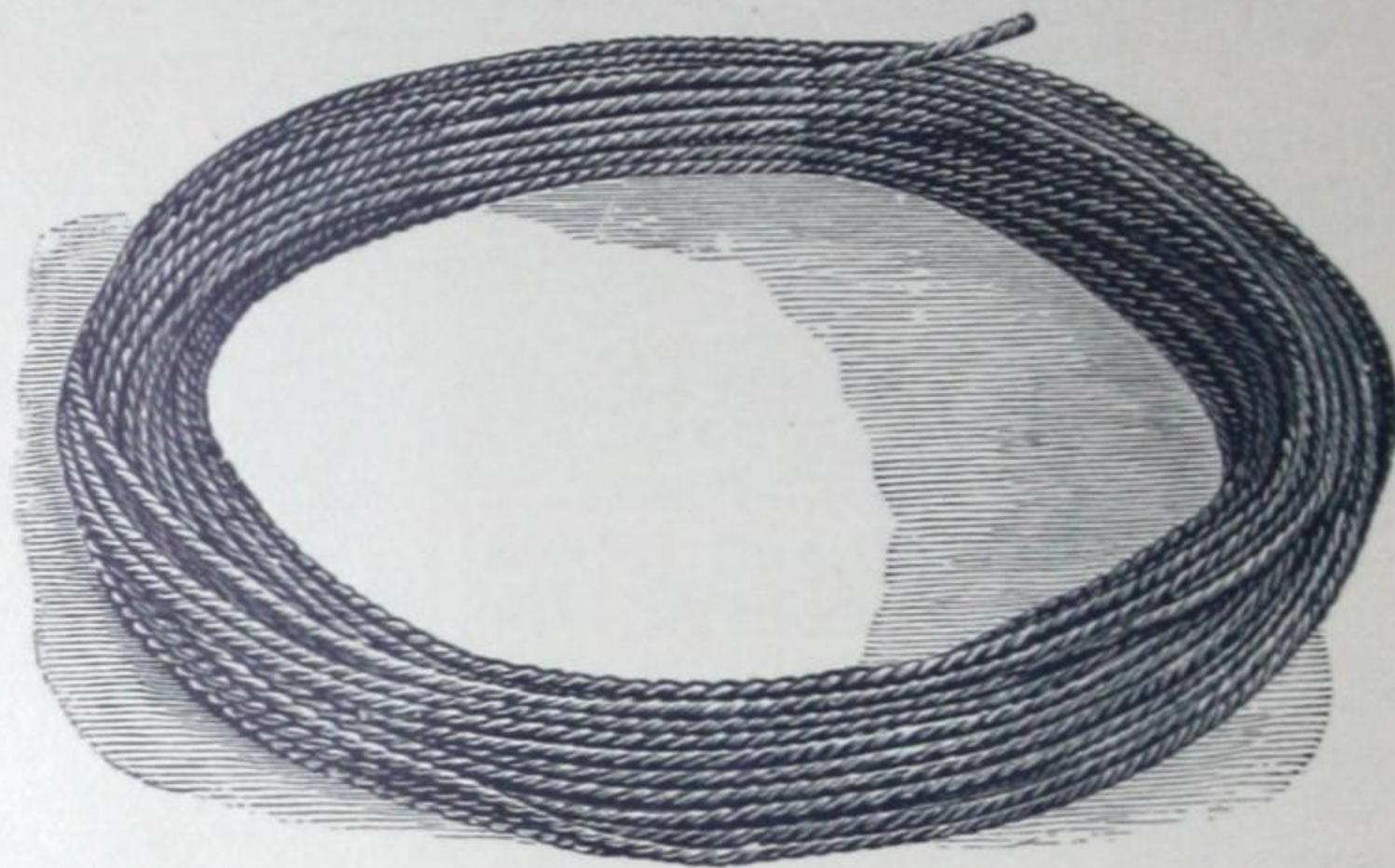
Flat.

Size, -----	$\frac{1}{4} \times 1\frac{1}{4}$ in.	$\frac{3}{8} \times 1\frac{1}{2}$ in.	$\frac{3}{8} \times 2$ in.	$\frac{1}{2} \times 2\frac{1}{2}$ in.
Weight per Foot, -----	1.215 lbs.	2.188 lbs.	2.917 lbs.	4.862 lbs.
Price per Pound, -----	\$0.40.	\$0.40	\$0.40.	\$0.40.

The above are standard sizes. Orders will be promptly filled by shipment from the factory.

Incandescent Lamp Cord and Moulding.

FOR DROP LIGHTS, PORTABLES, BRACKETS, ETC.



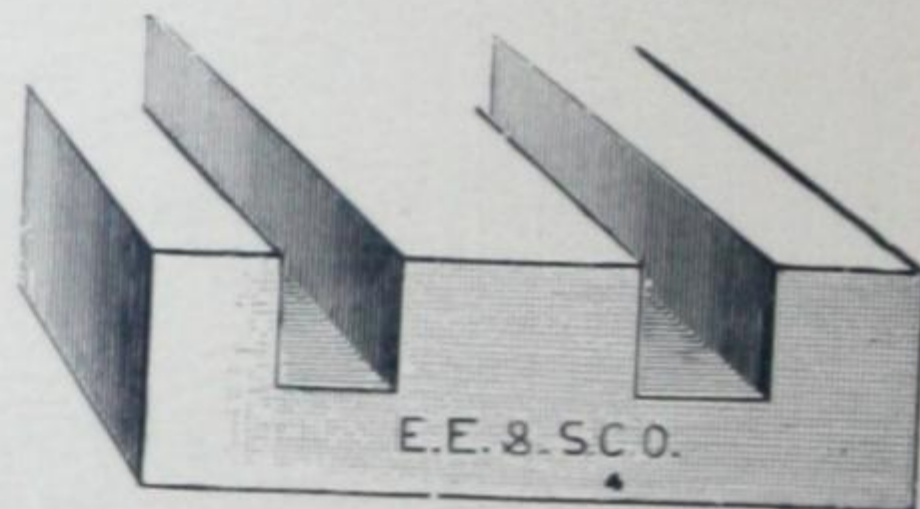
SILK COVERED.			COTTON COVERED.		
Equivalent to		Price Per Yard	Equivalent to		Price Per Yard
12	B. & S.	\$.40	12	B. & S.	\$.32
14	"	.29	14	"	.21
16	"	.19	16	"	.12
18	"	.16	18	"	.09
20	"	.12	20	"	.07

FURNISHED IN DIFFERENT COLORS.

Each Strand is Composed of Fine Wire, Insulated with Rubber and Braided. The Two Conductors are then Twisted Together.

This Cable will be Furnished with a Flame-Proof Insulation and Rubber Core or Entirely Without Rubber, though Completely Flame-Proof.

MOULDING AND CAPPING.



Moulding and Capping.

PRICE LIST.

CAPPING.		MOULDING.	
Size.	Price per 100 Feet.	Size.	Price per 100 Feet.
14-46,	\$1.50	14-16,	\$1.50
10-12,	1.50	10-12,	1.50
6-8,	1.75	6-8,	1.75
4,	2.75	4,	2.75

“VULCA”

ELECTRICAL WIRE DUCTS

ARE

Perfect Insulators, Absolutely Moisture-Proof, and
Non-Inflammable.

IT IS THE

Best **Substitute** for **Hard Rubber**, and the cost is much less. It will withstand the action of Plaster, Cement, Alkalies, Etc., and will not stain or exude through Plaster or Paint, even though subjected to extreme temperatures. It will not soften or collapse when placed in wet Plaster, Etc.

STRUCTURES OF ALL KINDS

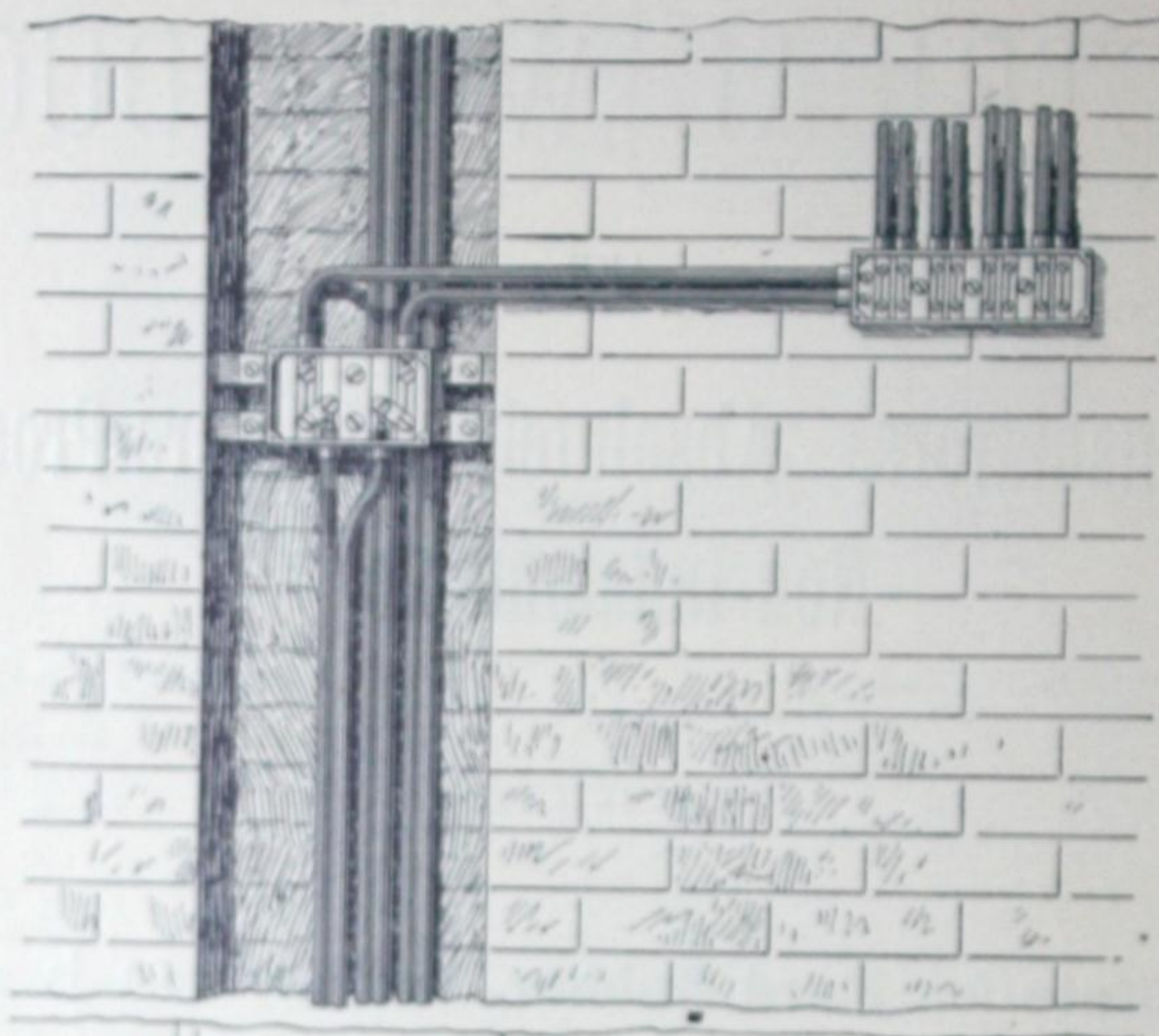
CAN BE

“CONDUITED”

While in the course of erection, and the insertion of the wires deferred until such times that they may be required, and without defacing the side walls and ceilings.

"Vulca" Electrical Wire Ducts.

Recess in Wall, showing feeder conduits, and floor and distributing cutouts and boxes.



"VULCA"
SYSTEM



"VULCA" SINGLE CONDUIT.

PRICE LIST.

$\frac{1}{4}$ Inch.....	Per 100 feet, \$3.20
$\frac{3}{8}$ "	" 3.80
$\frac{1}{2}$ "	" 4.80
$\frac{5}{8}$ "	" 6.00
$\frac{3}{4}$ "	" 7.25
1 "	" 9.00
$1\frac{1}{4}$ "	" 11.25

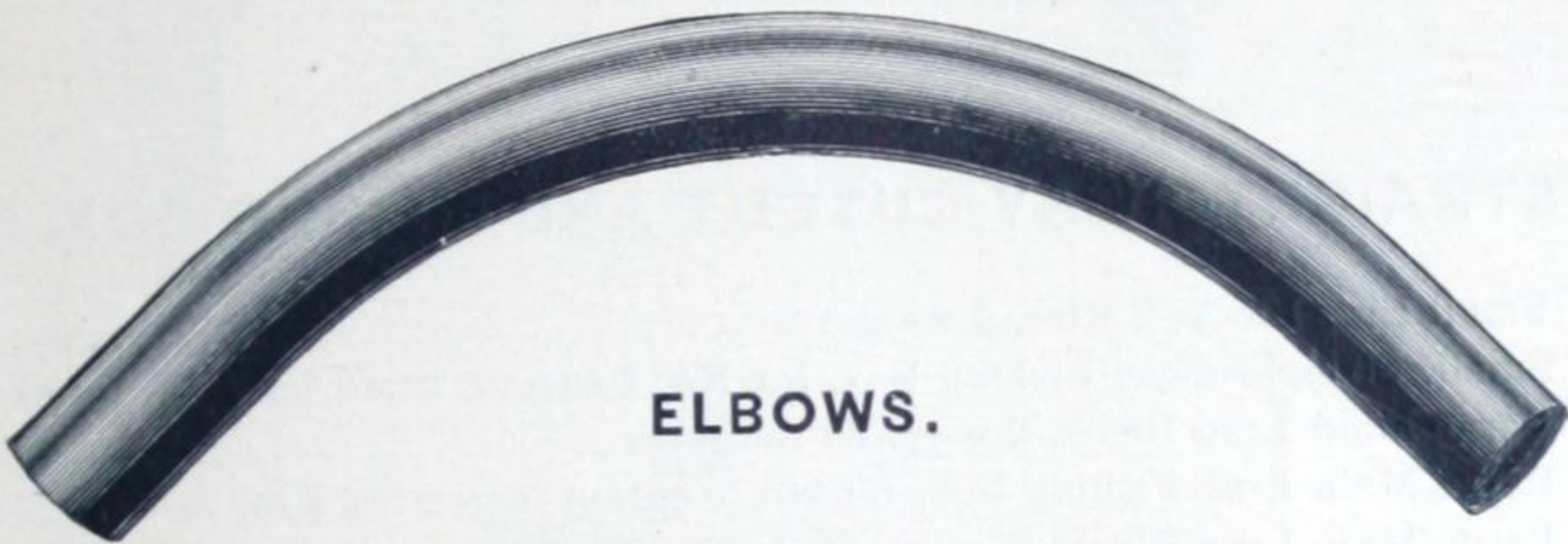
All measurements refer to inside diameter of Conduits.

Crating and Packing charged at cost.

Vulca Duplex Conduit.

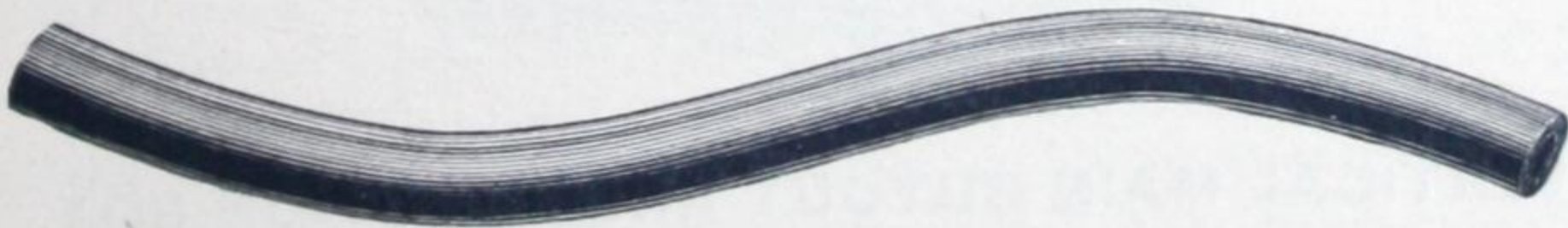


$\frac{1}{4}$ inch.	Per hundred feet	-----	\$ 8.00
$\frac{3}{8}$ "	" "	-----	10.00
$\frac{1}{2}$ "	" "	-----	12.00



ELBOWS.

$\frac{1}{4}$ inch.	For Single Tube, per hundred	-----	\$5.00
$\frac{3}{8}$ "	" "	-----	6.00
$\frac{1}{2}$ "	" "	-----	7.50
$\frac{5}{8}$ "	" "	-----	10.00
$\frac{3}{4}$ "	" "	-----	12.75
1 "	" "	-----	17.75
$1\frac{1}{4}$ "	" "	-----	24.00
$\frac{1}{4}$ "	For Duplex Flat Angle, per hundred	-----	12.50
$\frac{3}{8}$ "	" "	-----	15.75
$\frac{1}{2}$ "	" "	-----	20.75
$\frac{1}{4}$ "	Inside and Outside Angle, per hundred	-----	12.50
$\frac{3}{8}$ "	" "	-----	15.75
$\frac{1}{2}$ "	" "	-----	20.75

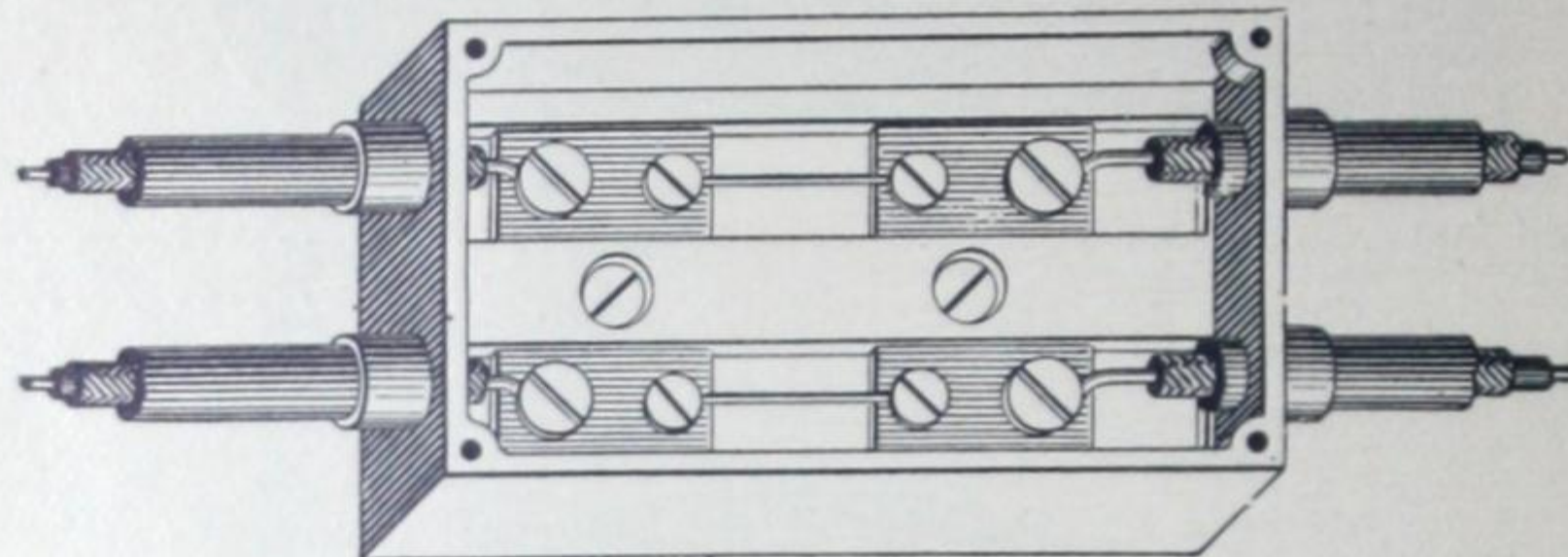


"S" OFFSETS.

$\frac{1}{4}$ inch.	For Single Tube, per hundred	-----	\$7.00	1 inch.	For Single Tube, per hundred	-----	
$\frac{3}{8}$ "	" "	-----	8.25	$1\frac{1}{4}$ "	" "	-----	
$\frac{1}{2}$ "	" "	-----	9.75	$\frac{1}{4}$ "	For Duplex Tube,	-----	
$\frac{5}{8}$ "	" "	-----		$\frac{3}{8}$ "	" "	-----	
$\frac{3}{4}$ "	" "	-----		$\frac{1}{2}$ "	" "	-----	

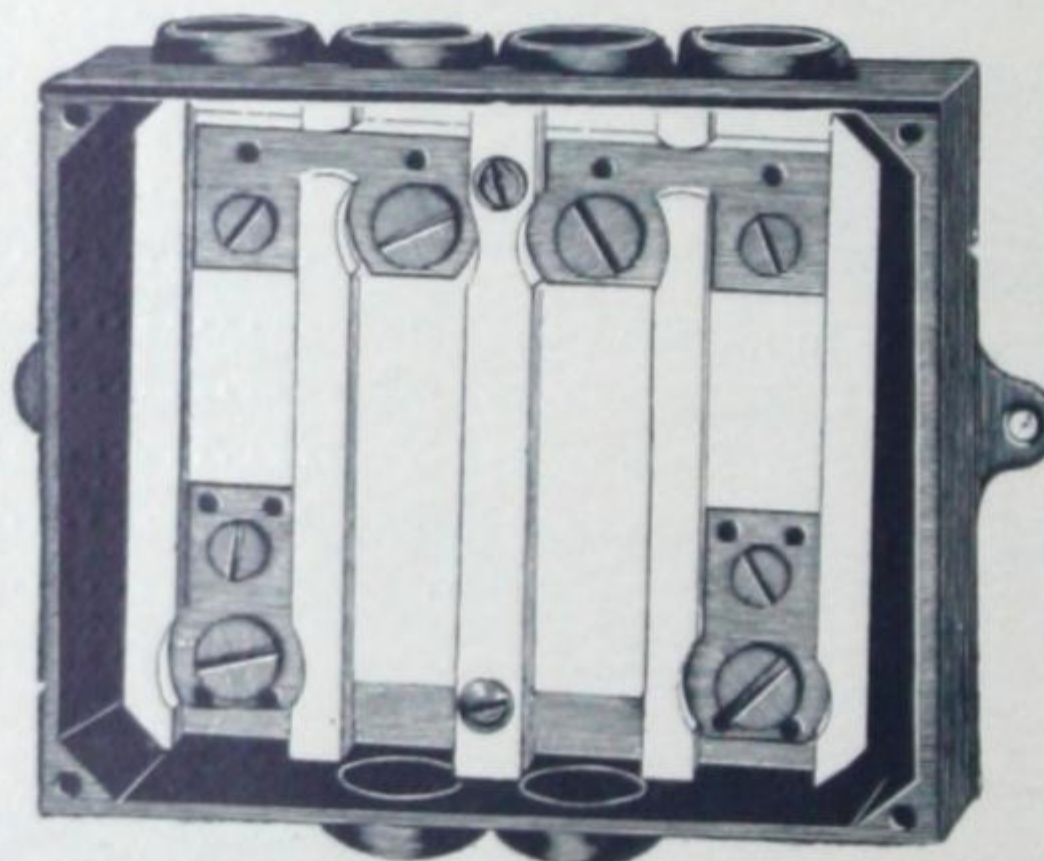
BRASS COUPLINGS.

SIZE.			PRICE.	SIZE.			PRICE.
$\frac{1}{4}$ inch.	For Single Tube	Per 100,	\$2.20	1 inch.	For Single Tube	Per 100,	\$5.00
$\frac{3}{8}$ "	" " "	"	2.45	$1\frac{1}{4}$ "	" " "	"	6.00
$\frac{1}{2}$ "	" " "	"	2.75	$\frac{1}{4}$ "	" Duplex "	"	4.00
$\frac{5}{8}$ "	" " "	"	3.60	$\frac{3}{8}$ "	" " "	"	5.00
$\frac{3}{4}$ "	" " "	"	4.00	$\frac{1}{2}$ "	" " "	"	5.50



STRAIGHT-AWAY CUTOUT AND FISHING BOX.

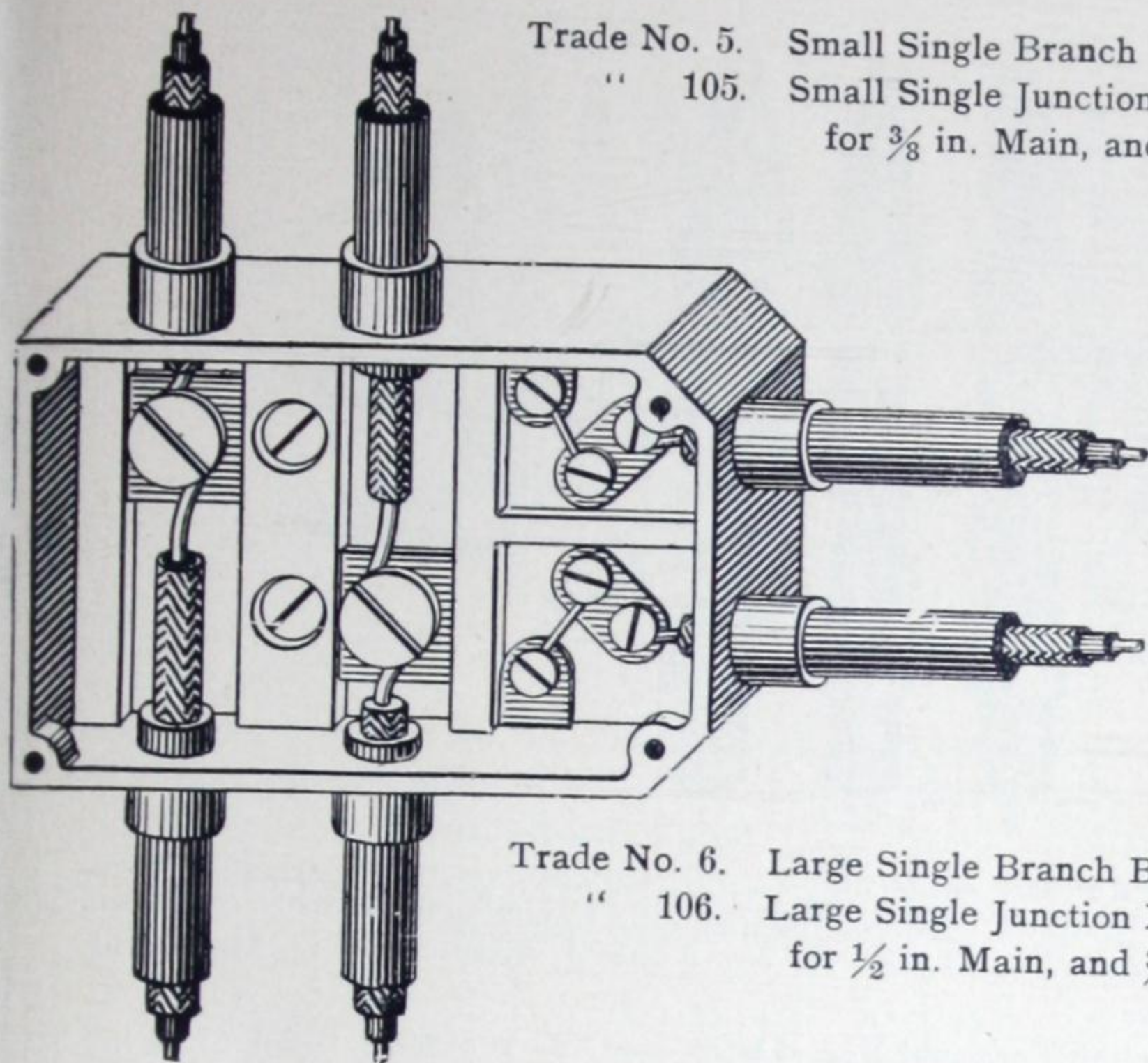
Trade No. 1.	Small Line Block, 2 wire, 6 Amperes	\$0.45
" 101.	Small, Straight-away Fishing Box, for No. 1 cutout, fitted for $\frac{1}{4}$ in. tubes	.40
" 2.	Large Main Line Block, 2 wire, 30 Amperes	1.10
" 102.	Large Main Line Fishing Box, for No. 2 cutout, fitted for $\frac{1}{2}$ in. tubes	.75
" 3.	Large Main Line Block, 3 wire, 30 Amperes	1.40
" 103.	Large Main Line Fishing Box, for No. 3 cutout, fitted for $\frac{1}{2}$ in. tubes	.90



VERTICAL MAIN CUTOUT AND JUNCTION BOX.

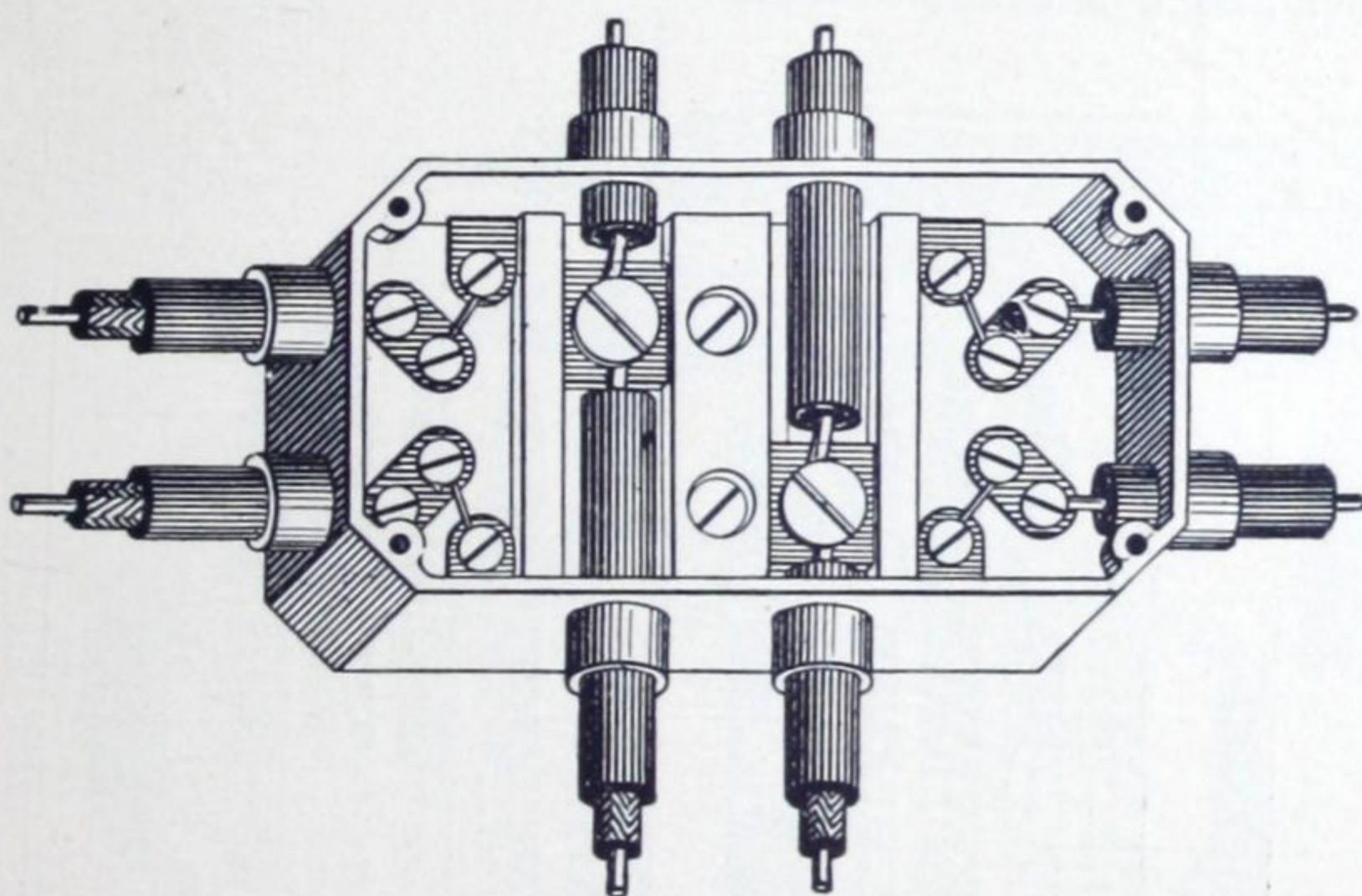
Trade No. 4.	Vertical Main Block, 2 wire, 30 Amperes	\$1.30
" 104.	Vertical Main Junction Box, for No. 4 cutout, fitted for $\frac{3}{8}$ in. tubes	.90
" 104 $\frac{1}{2}$.	Vertical Main Terminal Box, for No. 4 cutout, fitted for $\frac{3}{8}$ in. tubes	.90

Please use Trade Number in ordering.



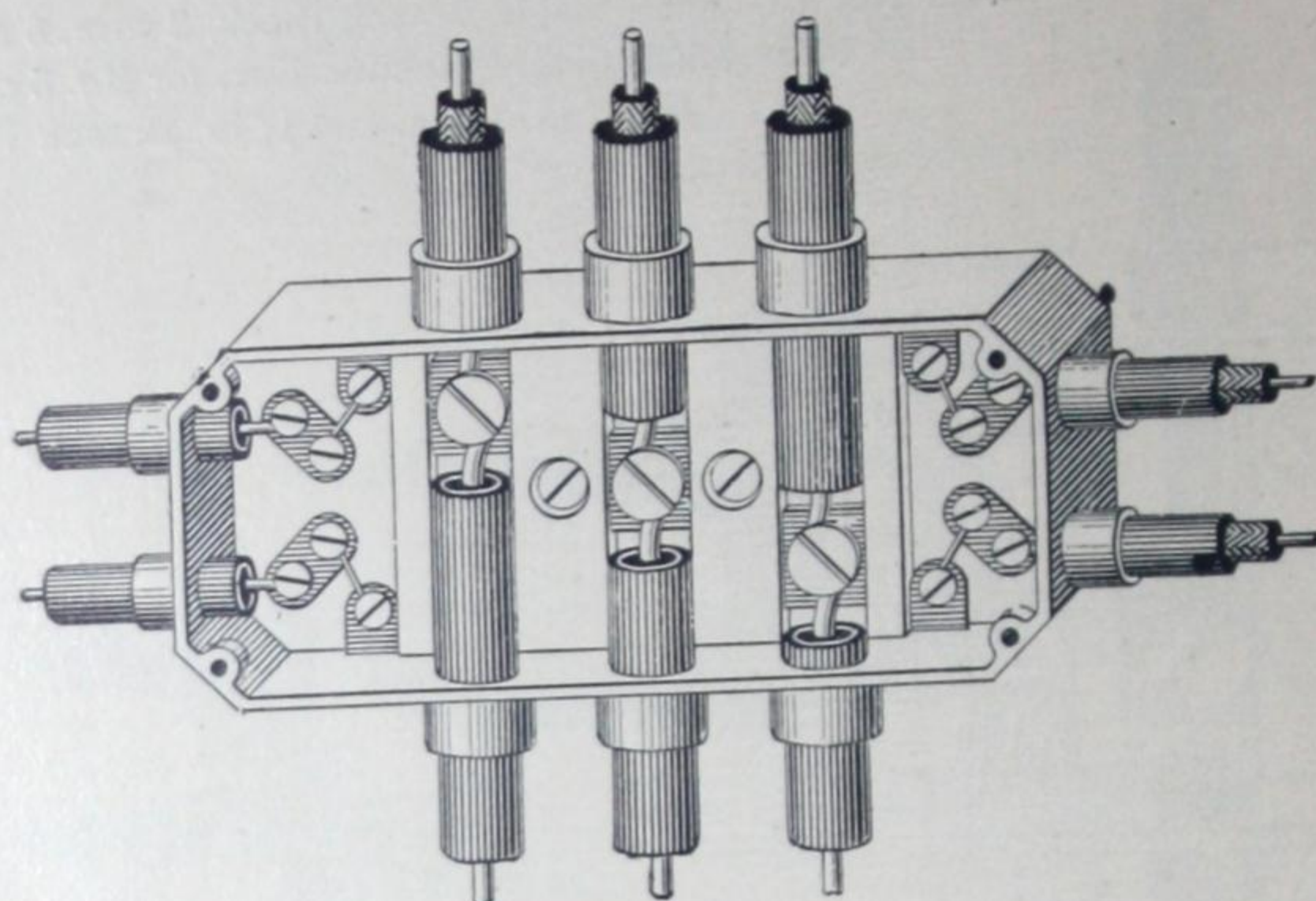
- | | | |
|--------------|--|--------|
| Trade No. 5. | Small Single Branch Block, 2 wire, 6 Amperes, | \$0.90 |
| " 105. | Small Single Junction Box, for No. 5 cutout, fitted
for $\frac{3}{8}$ in. Main, and $\frac{1}{4}$ in. Branch Tubes..... | .60 |

- | | | |
|--------------|--|--------|
| Trade No. 6. | Large Single Branch Block, 2 wire, 20 Ampere, | \$1.30 |
| " 106. | Large Single Junction Box, for No. 6 cutout, fitted
for $\frac{1}{2}$ in. Main, and $\frac{3}{8}$ in. Branch Tubes..... | 1.00 |

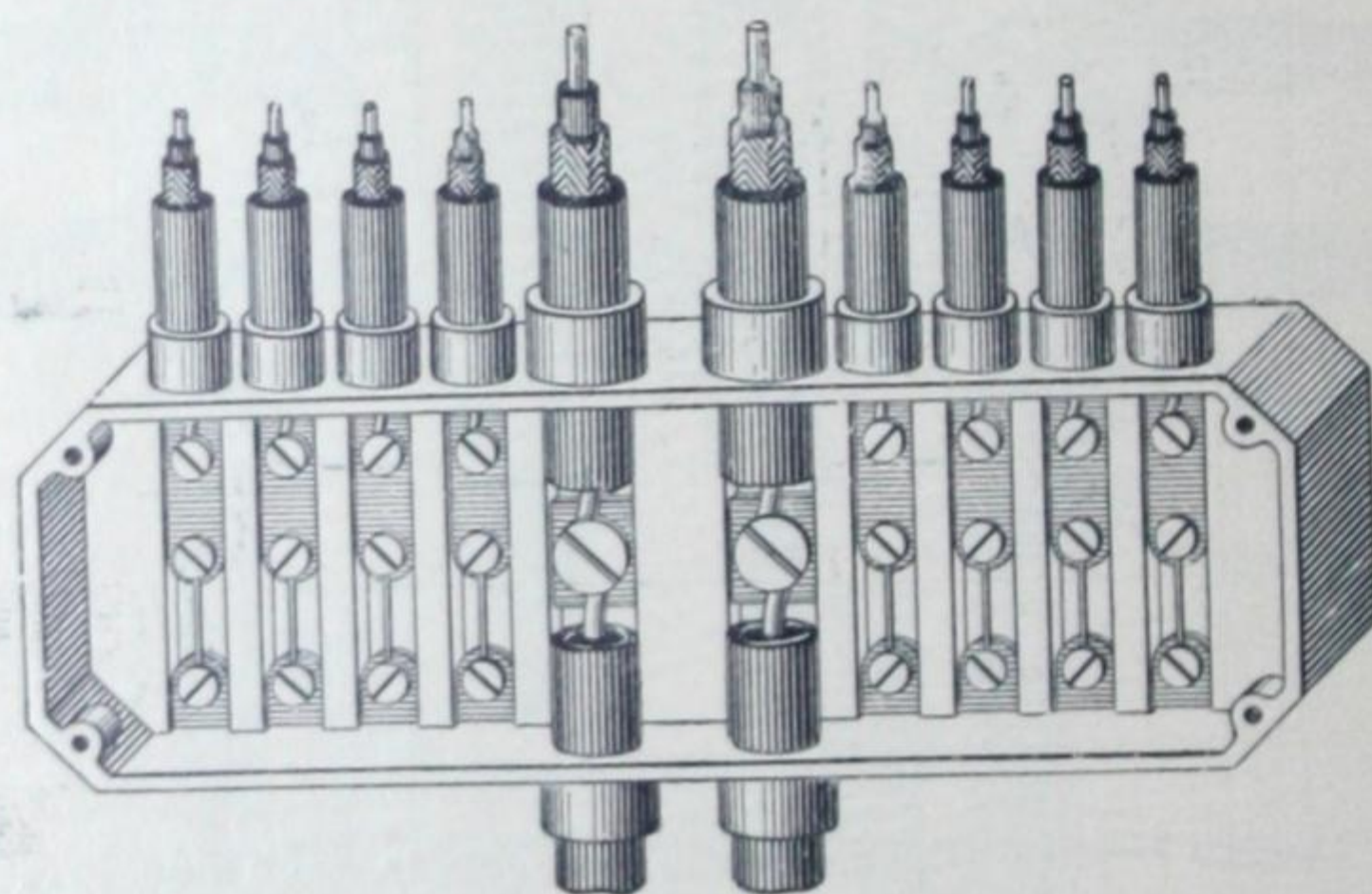


- | | | |
|-----------------------|--|--------|
| Trade No. 7. | Small Double Branch Block, 2 wire, 6 Amperes, each side..... | \$1.35 |
| " 107. | Small Double Junction Box, for No. 7 cutout, fitted for $\frac{3}{8}$ in. Main and $\frac{1}{4}$ in.
Branch tubes..... | .85 |
| " 107 $\frac{1}{2}$. | Small Double Junction Terminal Box, for No. 7 cutout, fitted for $\frac{3}{4}$ in. Main,
and $\frac{1}{4}$ in. Branch tubes..... | .85 |
| " 8. | Large Double Branch Block, 2 wire, 20 Amperes, each side..... | 1.65 |
| " 108. | Large Double Junction Box, for No. 8 cutout, fitted for $\frac{1}{2}$ in. Main and $\frac{3}{8}$ in.
Branch tubes..... | 1.50 |
| " 108 $\frac{1}{2}$. | Large Double Junction, Terminal Box, for No. 8 cutout, fitted for $\frac{1}{2}$ in. Main,
and $\frac{3}{8}$ in. Branch tubes..... | 1.50 |

Please use trade number in ordering.



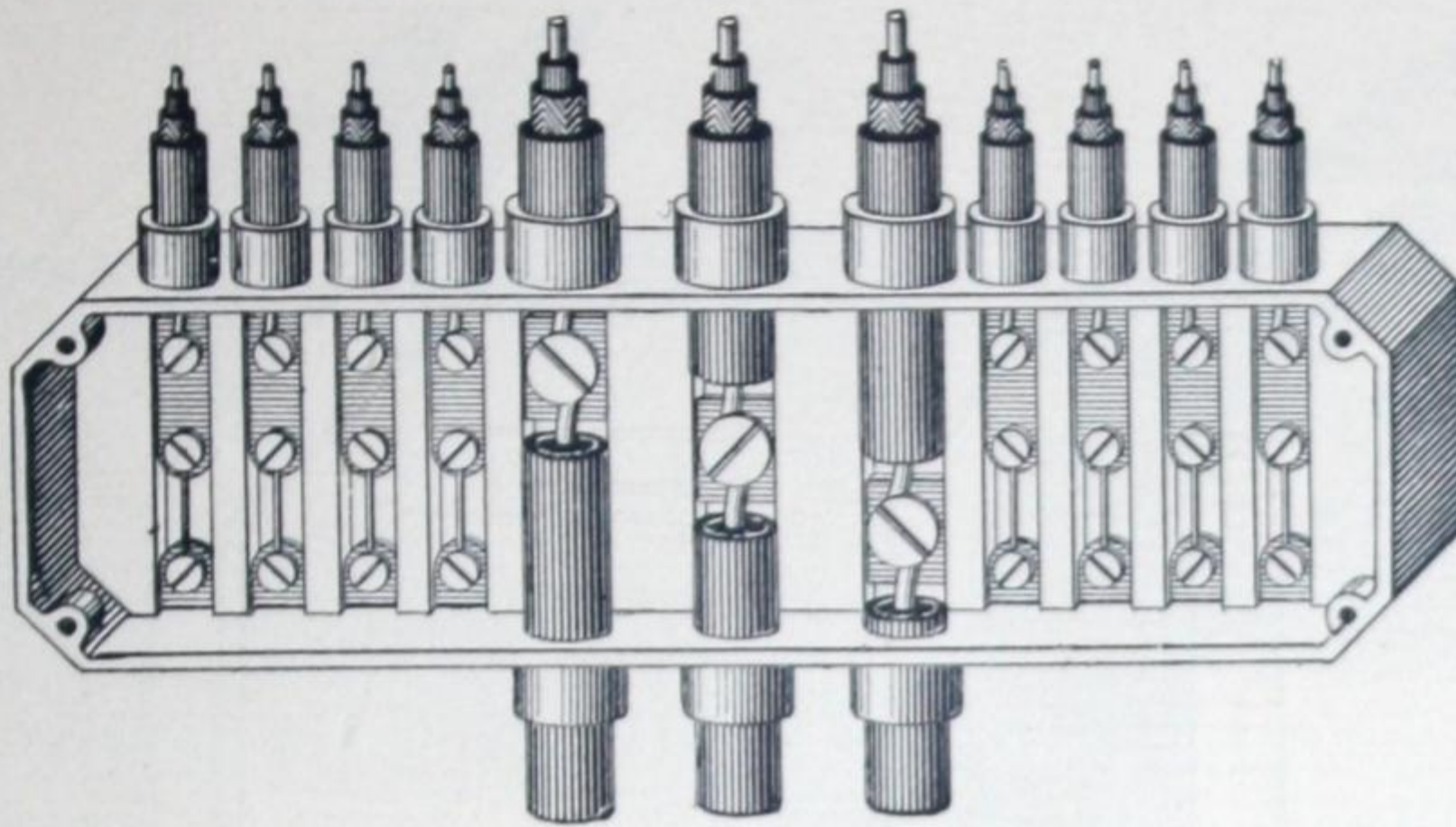
- Trade No. 9. Large Double Branch Block, 3 wire Mains, 2 wire Branch, 20 Amperes, each side, \$2.00
- " 109. Large Double Junction Box, 3 wire, for No. 9 cutout, fitted for $\frac{1}{2}$ in. Main, and $\frac{3}{8}$ in. Branch tubes 1.75
- " 109 $\frac{1}{2}$. Large Double Junction Terminal Box, 3 wire, for No. 9 cutout, fitted for $\frac{1}{2}$ in. Main, and $\frac{3}{8}$ in. Branch tubes 1.75



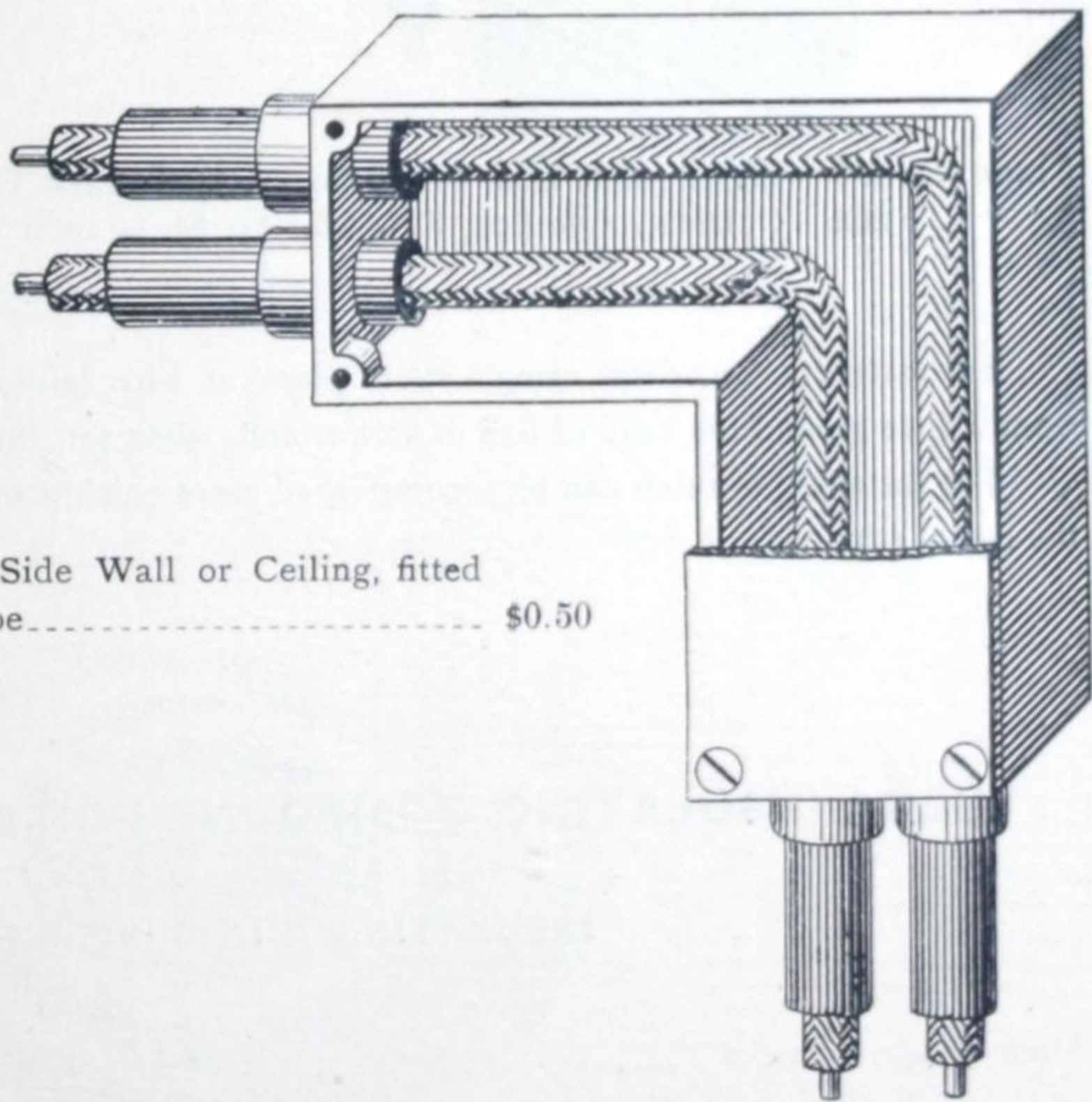
- Trade No. 20. 2 wire Main, 4 Circuit, 2 wire Distributing Block, 6 Amperes each \$2.50
- " 120. 2 wire Main, four 2 wire Branch Circuit Distributing Box, fitted for $\frac{1}{2}$ in. Main, and $\frac{1}{4}$ in. Branch tubes 2.00
- " 120 $\frac{1}{2}$. Distributing Terminal Box, 2 wire Main, four 2 wire Branch Circuits, fitted for $\frac{1}{2}$ in. Main and $\frac{1}{4}$ in. Branch tubes 2.00

Please use Trade Number in ordering.

Packing charged at cost.



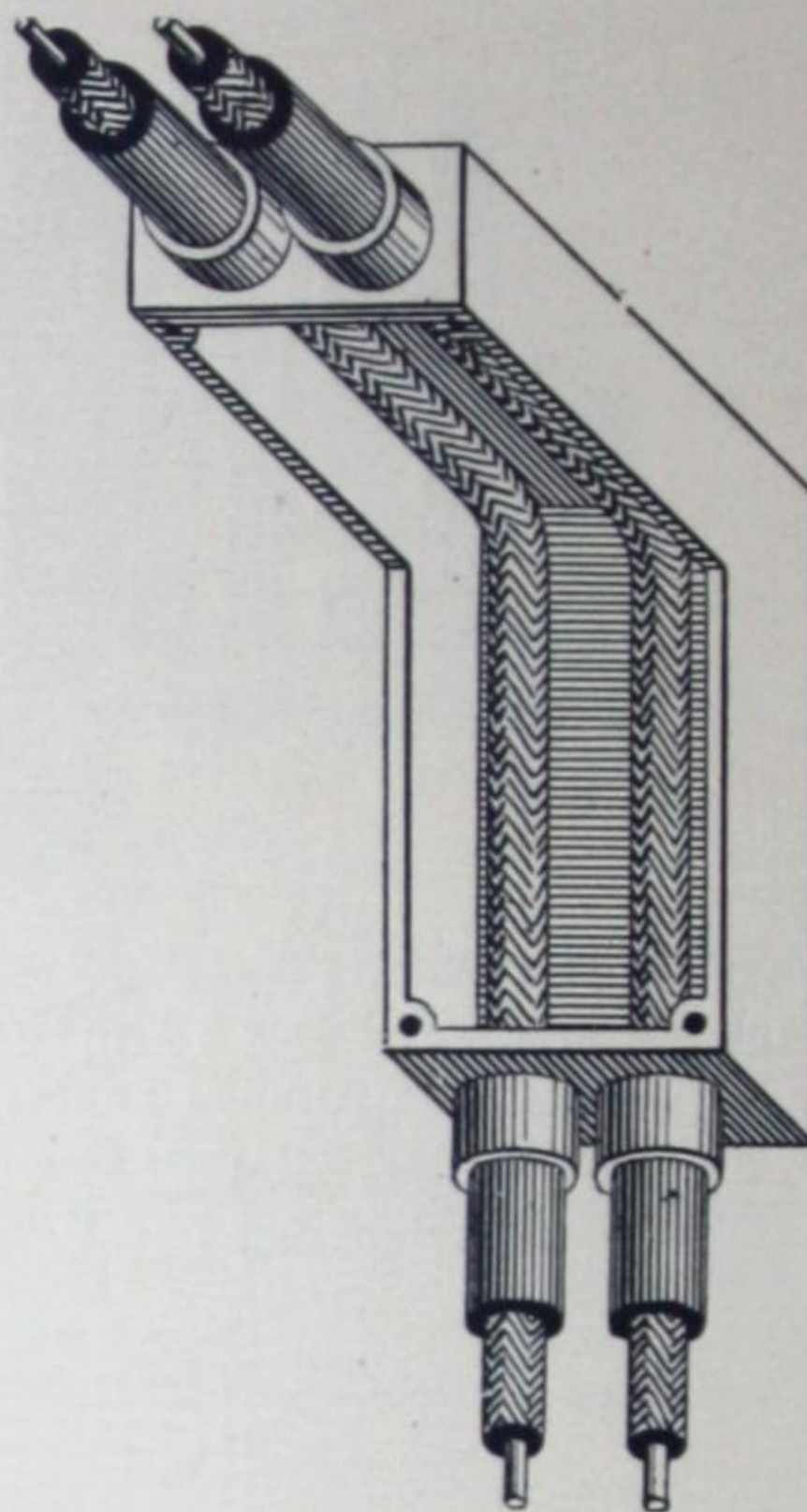
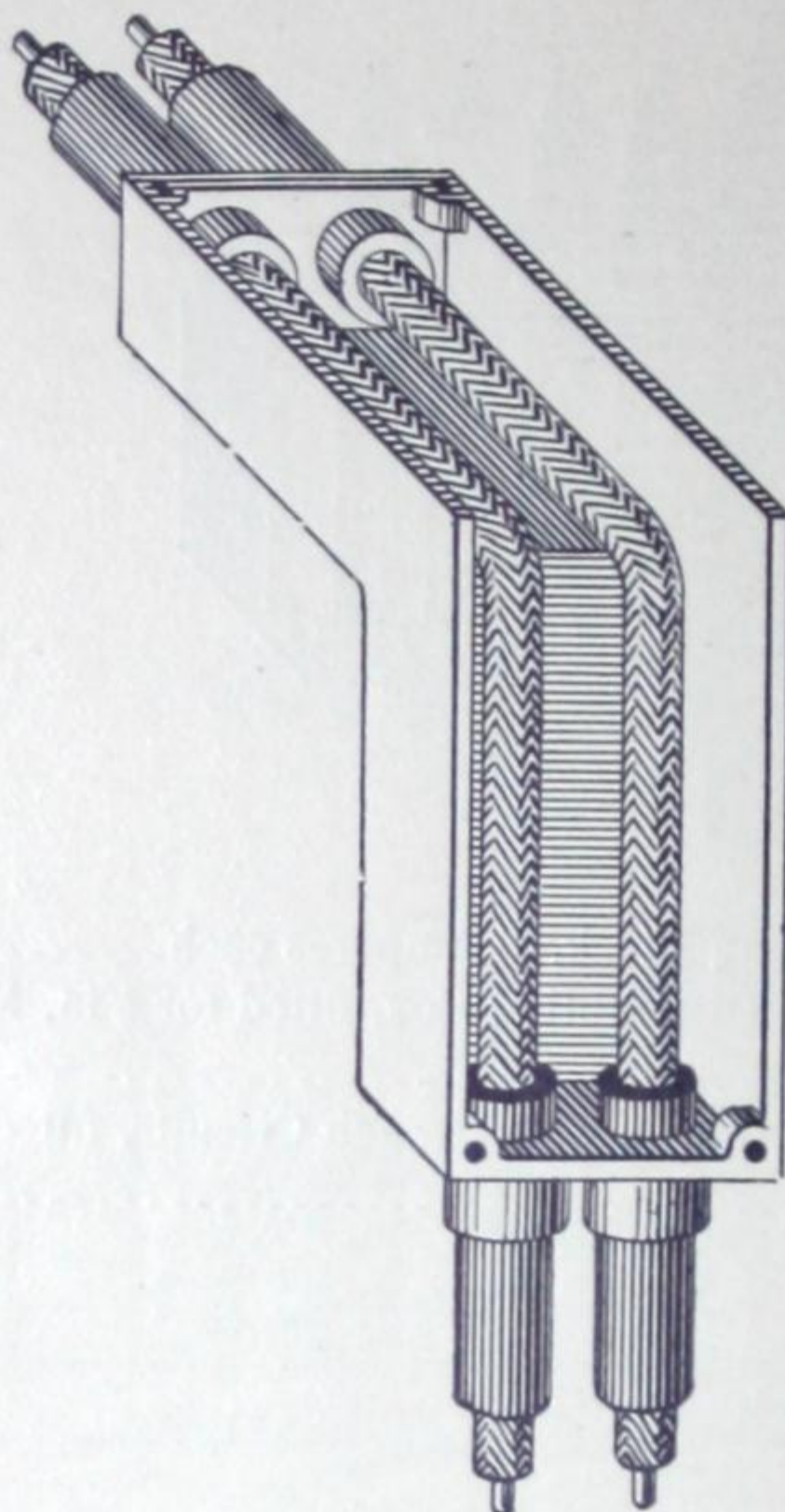
Trade No. 30.	3 wire Main, 4 Circuits, 2 wire Distributing Block, 6 Amperes each.....	\$3.00
" 130.	3 wire Main, four 2 wire Branch Circuit Distributing Box, fitted for $\frac{1}{2}$ in. Main and $\frac{1}{4}$ in. Branch Tubes.....	2.25
" 130 $\frac{1}{2}$.	Distributing Terminal Box, 3 wire Main, four 2 wire Branch Circuits, fitted for $\frac{1}{2}$ in. Main and $\frac{1}{4}$ in. Branch Tubes.....	2.25



Trade No. 201.	Flat Angle Box for Side Wall or Ceiling, fitted for $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ in. Tube.....	\$0.50
----------------	---	--------

Please use Trade Number in ordering.

Packing charged at cost.



Trade No. 202.	Inside Angle Box, Fitted for $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ Inch Tube	\$0.60
" 203.	Outside Angle Box, Fitted for $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ Inch Tube	.60

For fasteners, we advise using a short piece of wire (either tinned copper or galvanized iron), wound once around the head of nail or screw, and, when set, the wire forms a collar or "tie wire."

The fastening of tubes can be accomplished more quickly and securely by this method than with the use of clips.

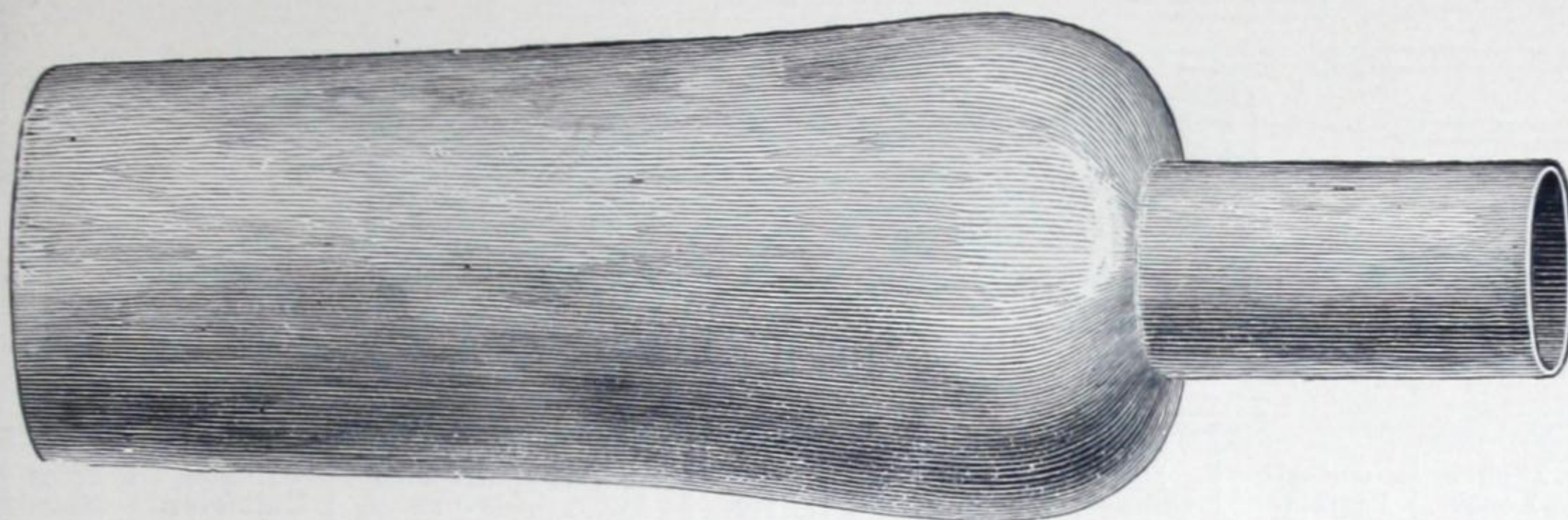
VULCA INSULATING COMPOUND FOR COUPLING CONDUITS, INSULATING JOINTS, SPLICES, ETC.

Made in $\frac{1}{4}$ lb. Sticks.....Per Lb. \$0.75

Please use trade numbers in ordering.

Packing charged at cost.

Rubber Goods.



No. 191b.

This cut represents our Pure India Rubber Cover for Keyless Sockets, to be used on outside work, or for damp places inside. It prevents the socket from rusting or corroding. It also makes the Incandescent Lamp steam or vapor-proof. 100 Doz.....\$2.50.



No. 1914.



Magnet Heads.

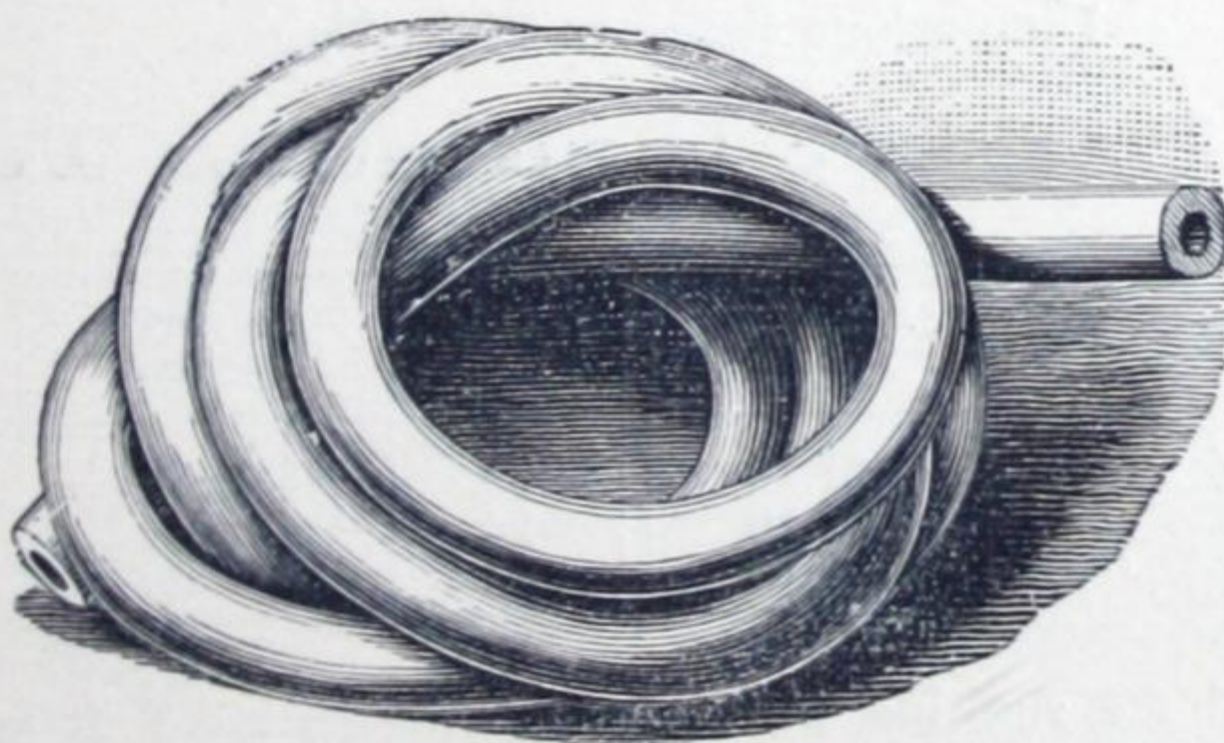
SIZES, —
 $\frac{3}{4}$ Inch,
 $\frac{7}{8}$ "
 $1\frac{1}{8}$ "
 1 "

$1\frac{1}{8}$ Inch,
 $1\frac{3}{8}$ "
 $1\frac{1}{4}$ "
 $1\frac{3}{4}$ "

$1\frac{7}{8}$ Inch.
 $1\frac{1}{2}$ "
 $1\frac{3}{4}$ "

Prices Sent Upon Application.

If Orders Do Not Specify the Kind Wanted, Plain Ones Will be Sent.



No. 1915.

Rubber Tubing.

$\frac{1}{4}$, $\frac{3}{8}$ AND $\frac{1}{2}$ INCH.

Cloth Inserted, per Foot, -----
 Plain Rubber, " " -----

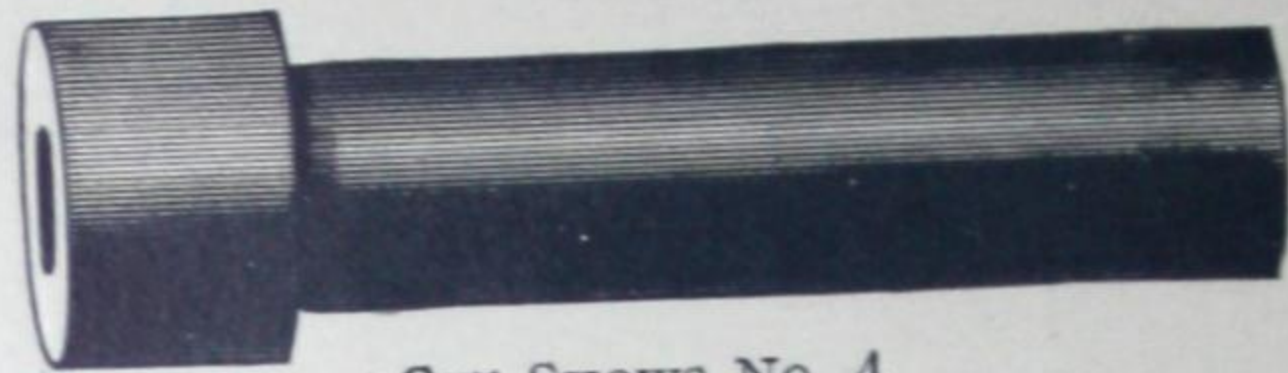
$\frac{1}{4}$ Inch, \$0.14
 " " .14

$\frac{3}{8}$ Inch, \$0.20
 " " .14

$\frac{1}{2}$ Inch, \$0.25
 " " .25

Hard Rubber Tubes with Heads.

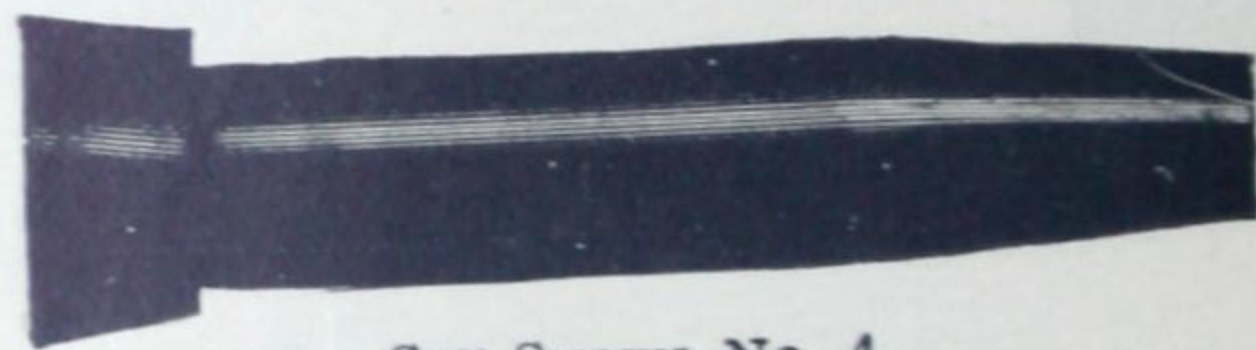
Plain.



CUT SHOWS NO. 4.

Trade No.	Inches Long.	Outside Diameter.	Inside Diameter.	Price per Hundred.	Trade No.	Inches Long.	Outside Diameter.	Inside Diameter.	Price per Hundred.
1	1 1/2	7/16	1/4	\$2.00	9	4	9/16	5/16	\$ 8.00
2	1 1/2	7/16	5/16	2.00	10	6	9/16	5/16	11.00
3	2 1/2	7/16	5/16	3.70	11	8	9/16	5/16	14.00
4	2 1/2	7/16	1/4	3.00	12	4	5/8	3/8	9.25
5	3	7/16	1/4	4.00	14	12	5/8	3/8	24.00
6	4	7/16	1/4	5.00	15	8	3/4	1/2	20.00
7	6	7/16	1/4	8.00	17	2 1/2	9/16	3/8	4.00
8	3	9/16	5/16	6.00	19	4	3/4	1/2	10.00

Polished.



CUT SHOWS NO. 4.

Polished Window Tubing furnished in following sizes

Trade No.	Price per 100.	Trade No.	Price per 100.
1,	\$3.50	4,	\$6.50
2,	3.50	5,	8.00
3,	5.00	6,	9.00

Dimensions Same as Plain Tubing.

Hard Rubber Insulating Tubing.

Trade No.	Outside Diameter.	Inside Diameter.	Price per Pound.	Trade No.	Outside Diameter.	Inside Diameter.	Price per Pound.
20	3/8 Inch.	1/4 Inch.	\$1.10	23	5/8 Inch.	7/16 Inch.	\$1.10
21	6/16 "	5/16 "	1.10	24	5/8 "	3/8 "	1.10
22	7/16 "	5/16 "	1.10	25	3/4 "	1/2 "	1.10

This Tubing is used for running wires through walls, etc. It is strong, a good insulator, and will resist the action of acids.

Soft Rubber Tubing.

Size, Inside Diameter (Inches),	1/8	3/16	1/4	5/16	3/8	1/2
Will cover Insulated Wire No. (B. & S.),	.20	.25	.30	.35	.40	.50
Price per foot,	\$0.08	\$0.12	\$0.16	\$0.18	\$0.20	\$0.25

Rubber and Fibre Sheet and Rod.

SHEET RUBBER.

SIZE OF SHEETS, 20x48 INCHES.

The Following Sizes Kept in Stock:—

Thickness, (Stubs' Gauge.)		Price per Pound.	Approximate Weight of Full Sheets.
26 Gauge.	-----	2.25	11 oz.
25 "	-----		13 "
24 "	-----		14 "
23 "	-----	2.35	1 lb.
22 "	-----		1 1/8 "
21 "	-----		1 3/8 "
20 "	-----	1.65	1 1/2 "
19 "	-----		1 5/8 "
18 "	-----		2 "
17 "	1/16 inch-		2 1/4 "
16 "	-----		2 3/4 "
15 "	-----		2 7/8 "
14 "	3/32 inch-		3 3/8 "
13 "	1/8 inch-		3 7/8 "
12 "	-----		4 3/8 "
11 "	1/8 inch-	.90	5 1/4 "
10 "	5/32 inch-		5 1/2 "
9 "	-----		6 "
3/16 "	-----		7 1/2 "
1/4 "	-----		10 1/2 "
5/16 "	-----		13 1/4 "
3/8 "	-----		16 1/2 "
7/16 "	-----		18 3/4 "
1/2 "	-----		22 "
9/16 "	-----		24 "
5/8 "	-----		27 "
3/4 "	-----		32 "
7/8 "	-----		35 "
1 "	-----		40 "
1 1/4 "	-----		50 "

RUBBER RODS.

IN LENGTHS OF 30 INCHES.

The Following Sizes in Kept in Stock:—

Diameter.	STANDARD QUALITY.		PELLINGER COMPOUND.
	Price per Pound.	Approximate Weight per 100 Feet.	
1/8 inch.	1.20	3/4 lb.	
5/32 "		1 1/8 "	
3/16 "		1 1/2 "	
1/4 "		2 3/4 "	
5/16 "		4 "	
3/8 "		6 1/8 "	
7/16 "		8 "	
1/2 "		10 1/4 "	
9/16 "		12 3/4 "	
5/8 "		16 "	
11/16 "		19 1/4 "	
3/4 "		22 3/4 "	
7/8 "	.86	27 3/4 "	
15/16 "		29 1/4 "	
1 "		36 1/2 "	
1 1/8 "		42 "	
1 1/4 "		53 1/4 "	
1 1/2 "		65 1/2 "	
1 3/4 "		79 1/2 "	
1 7/8 "		92 1/2 "	
2 "		114 1/2 "	
2 1/4 "		128 "	
2 1/2 "		1 rod-4 lb.	
		1 " 5 1/4 "	
	1.15	1 " 6 1/4 "	

HARD RED OR GRAY FIBRE.

IN SHEETS ABOUT 42x66 INCHES, 8x42 INCHES, OR 12x42 INCHES.

Under 1/16 in. thick,-----Per lb., \$0.60 | Over 1/2 in. to 7/8 in. thick,--Per lb., \$0.60
From 1/16 in. to 1/2 in. thick,-----" .50 | Over 7/8 in. to 1 1/4 in. thick,--" .75

Parties ordering a full sheet (about 20 square feet) of Hard Fibre, can have it cut into strips (about 42 or 66 inches long) of any desired width, not less than 5 inches, without extra cost. Black Fibre 5 cents per lb. more. Discount according to quantities purchased.

SQUARE STICKS OF HARD FIBRE.

1/4 to 1/2 in. sq., random lengths,-----Per lb., \$0.60
Over 1/2 to 7/8 in. sq., random lengths,-----" .70
" 7/8 " 1 1/4 "-----Special Rates

Tubes are made from 1/4 inch, inside diameter, up to 5 1/2 or 6 inch, with varying thickness of shells, and in lengths of about 2 feet. Prices quoted on sizes and quantities required upon application.

Round Rods from 5/8 inch diameter to 1 1/8 inch diameter in lengths of about 3 feet. Prices according to size. Practicable special shapes can be made to order upon special terms.

Brass Sheet, Rod and Tubing.

Roll and Sheet Brass.

Brown & Sharpe's Gauge Standard.

COMMON HIGH BRASS	Wider than and Including	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
		2	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
		10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
To No. 20, inclusive,-----		21	22	23	25	27	29	31	33	36	39	42	46	50	55	60	65
Nos. 21, 22, 23 and 24, ---		22	23	24	26	28	30	32	34	37	40	43	47	51	56	61	68
" 25 and 26, -----		22½	23½	24½	27	29	31	33	35	38	41	44	48	52	57	63	71
" 27 " 28, -----		23	24	25	28	30	32	34	36	39	42	45	49	53	58	65	75

Sheets over 40 in. wide, special prices, not less than 80 cents.

Add 9 cents per lb. for sheets cut to particular widths and lengths.

Add ½ cent per lb. additional on each No. thinner than No. 28 to 38, inclusive.

Brass thinner than No. 38 is PLATERS' BRASS, at 55 cents.

BRAZING, SPINNING, and SPRING BRASS, 1 cent per lb. more than Common High Brass.

LOW BRASS, 4 cents per lb. more than Common High Brass.

GILDING, OREIDE, and BRONZE, 7 cents per lb. more than Common High Brass.

FOR SLITTING METAL

ADD TO LIST AS FOLLOWS:

Over ½ in. to 2 in., inclusive, Nos. 42 to 20, inclusive-----	½ ct.
Over ¼ in. to ½ in., inclusive, Nos. 12 to 20, inclusive,-----	1 "
¼ in. and narrower, not less than-----	4 "
Over ½ in. to 2 in., inclusive, Nos. 21 to 28, inclusive,-----	1 "
Over ¼ in. to ½ in., inclusive, Nos. 21 to 28, inclusive,-----	2 "
¼ in. and narrower, Nos. 21 to 28, inclusive, not less than-----	6 "
Over ½ in. to 2 in., inclusive, Nos. 29 to 32, inclusive,-----	1½ "
Over ¼ in. to ½ in., inclusive, Nos. 29 to 32, inclusive,-----	3 "
¼ in. and narrower, Nos. 29 to 32, inclusive, not less than-----	12 "
Over ½ in. to 2 in., inclusive, No. 33 and thinner,-----	3 "
Over ¼ in. to ½ in., inclusive, No. 33 and thinner,-----	6 "
¼ in. and narrower, No. 33 and thinner, not less than-----	18 "
Slit Metal cut to particular lengths, per pound, additional,-----	5 "

HIGH BRASS RODS.

NOT LESS THAN TWO FEET LENGTHS.

Unless length is stated, we send eight feet.

Over 1 inch diameter,-----	Per lb., 27 ct.
¼ inch to 1 inch diameter, both inclusive,-----	" " 24 "
No. 8, and less than ¼ inch diameter,-----	" " 26 "
Smaller than No. 8,-----	" " 30 "

Hexagon, Octagon, and Square, 2 cents per pound, advance over Round Rods.

Half Round and Fancy Shapes, not less than 4 cents, advance over Round Rods.

Rods less than 2 feet lengths, add to above prices 1 cent per pound for each cut.

Add for Gilding, Bronze, Low Brass, etc., as per list.

Drawn Brass Strap,-----Per lb 26 ct.

RULES TO OBSERVE IN ORDERING.

All Copper in Sheets is numbered according to Stubs' Gauge.

All Brass in Sheets is numbered according to Brown & Sharpe's Gauge.

Brass and Copper Wire is numbered according to Stubs' Gauge.

Brazed Brass and Copper Tubing is numbered according to Brown & Sharpe's Gauge.

Seamless Brass and Copper Tubing is numbered according to Stubs' Gauge.

All orders, when the name of Gauge is not stated, will be filled as above.

In case parties ordering Sheet Metal, Tubing or Wire have no Gauge, a small piece of either material may be sent, which will answer for the number.

In ordering Sheet Metal always state width and temper wanted.

Sheatings and Compounds.

P & B

Important to Electricians,
Telephone, Telegraph

Electric Light and
Electric Railway Companies.

The Greatest of Modern Insulators and
Moisture Excluder,

P. & B. COMPOUNDS,

(The Color is Invariably Black.)

Grade.	½ Gallon Packages.	1 Gallon Packages.	2½ Gallon Packages.	5 Gallon Packages.	PER GALLON, IN—	
					½ Barrel Lots.	Barrel Lots.
1	\$1.00	\$1.75	\$4.00	\$8.00	\$1.55	\$1.50
2	.85	1.50	3.50	7.00	1.30	1.25

No. 1. For coating Switch Boards and the finer class of Interior Fixtures.

No. 2. For Battery Shelves and Cases, Cable Houses, Cable Ends, Lead Cables, etc., Exterior
Fixtures and Cross Arms. This Paint is Very Quick to Dry.

P. & B. SHEATHINGS.

36 inches wide, in rolls containing 1,000 square feet. Sold only in complete rolls. Samples on
application.

Grade,	1 Ply.	2 Ply.	3 Ply.	4 Ply.
Price per Roll,	\$3.00	\$4.50	\$6.50	\$10.00

The 1, 2, 3 and 4 Ply Sheathings have a paper base, and are largely used in any work or struc-
ture where it is desirable to exclude moisture.

CANVAS BODY P. & B. FLEXIBLE BOARD.

Price, Per Package, \$8.00

The Canvas Body P. & B. Flexible Board is nearly one-tenth of an inch thick ; pliable, strong and durable, acid
and alkali-proof, makes the best and cheapest possible kind of roofing for temporary structures, laboratories, cable
houses, battery sheds, and for shelving or tables, where high insulation and impermeability to acids is required, this
article makes a valuable covering. Its great use will be made manifest by inspecting a sample of it. It is exten-
sively used in general roofing, as it is a perfect roof in itself, only requiring a sufficiently stable structure to support
it to afford complete protection against Moisture. It is put up and sold only in packages of 212 lineal feet, 33 inches
wide, making 583 square feet.

Electric Side Brackets.



No. 1760.

4 Inch	Per Dozen, \$12 50
6 " "	" 12 50
8 " "	" 13 25
10 " "	" 13 75
12 " "	" 14 25



1752.

Polished Brass or Gold.	
6 Inch	Per Dozen, \$10 00
8 " "	" 10 75
10 " "	" 11 25
12 " "	" 12 00



No. 1757.

Finished in Polished Brass or Gold.	
6 Inch	Per Dozen, \$10 00
8 " "	" 10 75
10 " "	" 11 25
12 " "	" 12 00

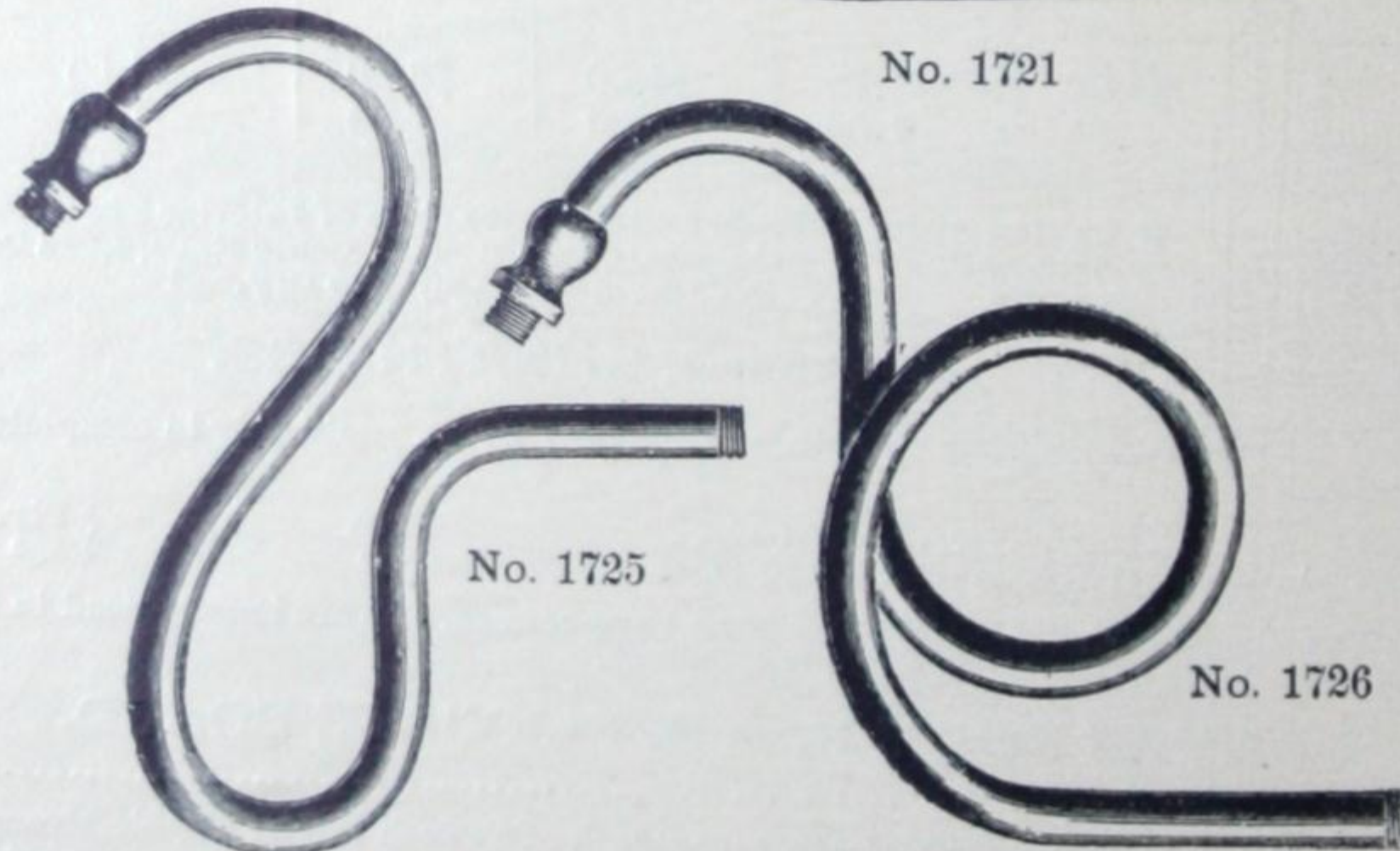


No. 1758.

Finished in Polished Brass or Gold.	
6 Inch	Per Dozen, \$10 00
8 " "	" 10 75
10 " "	" 11 25
12 " "	" 12 00



No. 1721

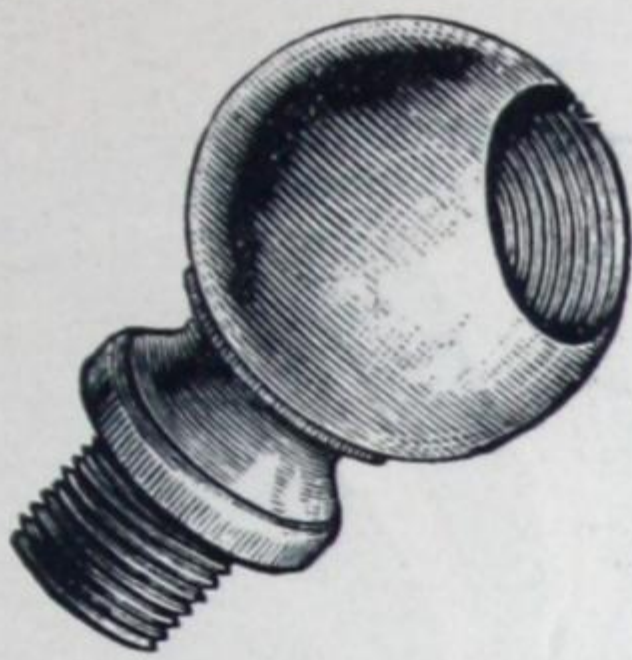


No. 1725

No. 1726

No. 1720.	Plain Bracket, 8 inches	each, \$0 50
" 1721.	" " 10 " "	" 55
" 1725.	Swan " "	" 75
" 1726.	Snake " "	" 75

Incandescent Fittings.

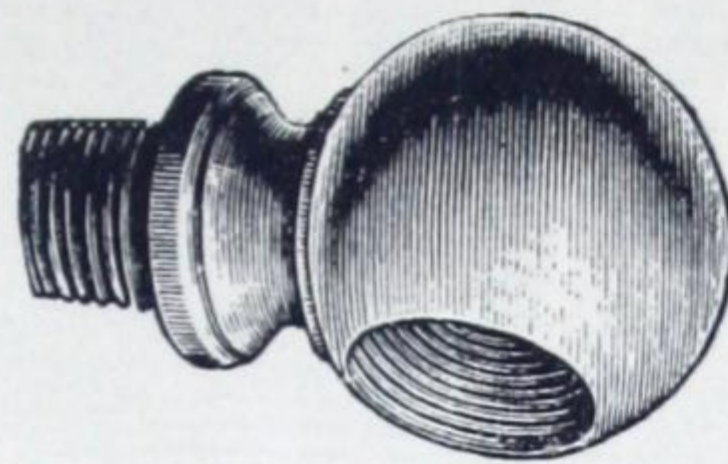


No. 1456 1/2.

45° L NOZZLE.

TURNED BRASS.

3/8x3/8	Polished Brass, Brass Thread	PER DOZ. \$3.00
7/8x3/8	" " " "	3.50
1 1/2x3/8	" " " "	4.00

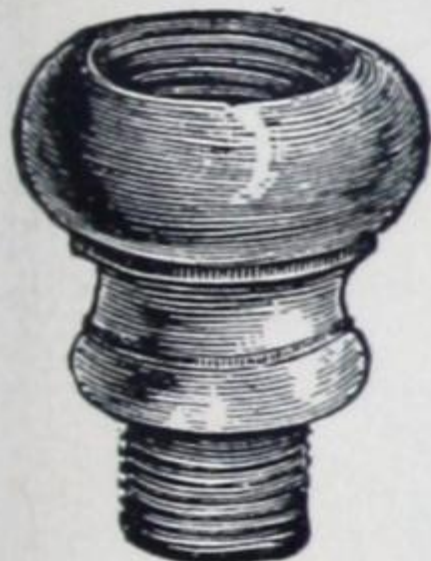


No. 1451.

L NOZZLE.

POLISHED BRASS OR GOLD.

3/8x3/8	Brass	Per Dozen, \$2.50
7/8x3/8	"	2.75
1 1/2x3/8	"	3.10
5/8x3/8	"	3.50



STRAIGHT NOZZLE.

POLISHED BRASS OR GOLD.

3/8x3/8 inch, Brass	Per Dozen, \$2.12
7/8x3/8 " "	2.50
1 1/2x3/8 " "	2.75
5/8x3/8 " "	3.10



No. 1.



No. 2.



No. 3.



No. 4.

ADAMITE BUSHINGS.

No. 1	Per 100, \$4.50
" 2	4.50
" 3	3.50
" 4	4.50

WOODEN BUSHINGS OR PLUGS.

No. 10	Per 100, \$2.00
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No. 10.

Sliding Canopies and Finishing Cells.



No. 1325.

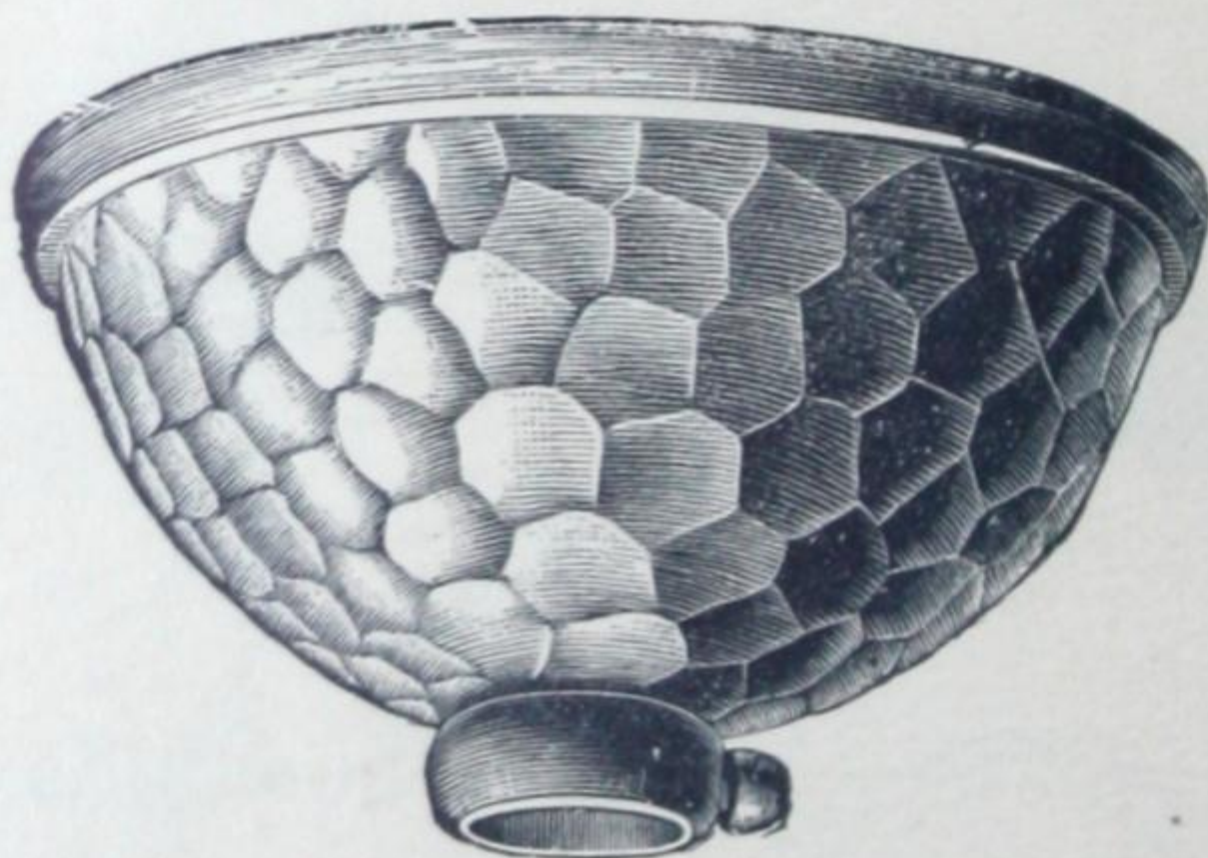


No. 1326.

LIST FOR 1325-1326.

Finished in Polished Brass or Gold. Covering Tripods and Insulating Joints.

3 Inch, for $\frac{1}{8}$ to $\frac{3}{8}$ Iron Pipe, or $\frac{3}{8}$ to $\frac{3}{4}$ Brass Tube	Per Dozen, \$ 6.90
4 " " $\frac{1}{3}$ " $\frac{1}{2}$ " " $\frac{3}{8}$ " $\frac{3}{4}$ " "	9.00
5 " " $\frac{3}{8}$ " $\frac{3}{4}$ " " $\frac{3}{8}$ " 1 " "	12.00
6 " " $\frac{3}{8}$ " 1 " " $\frac{3}{8}$ " $1\frac{1}{2}$ " "	15.00



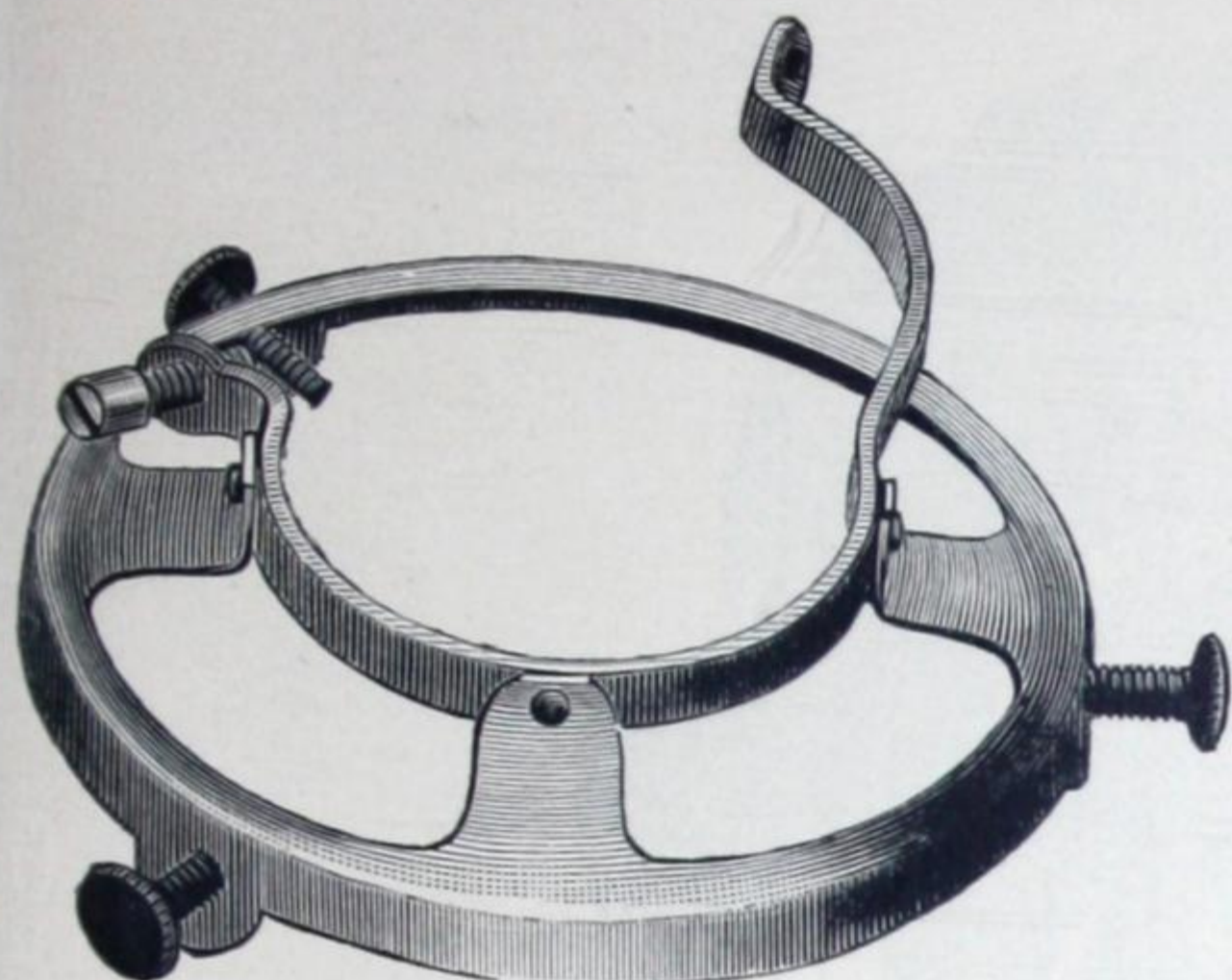
No. 1327.

Finished in Polished Brass or Gold. Covering Tripods and Insulating Joints.

3 Inch, for $\frac{1}{8}$ to $\frac{3}{8}$ Iron Pipe, or $\frac{3}{8}$ to $\frac{3}{4}$ Brass Tube	Per Dozen, \$6.90
Made Only 3 Inch Diameter.	

In Ordering please state whether Canopy Slides on Brass or Iron, and the size of Tubing or Pipes.

Shade Holders and Canopy.



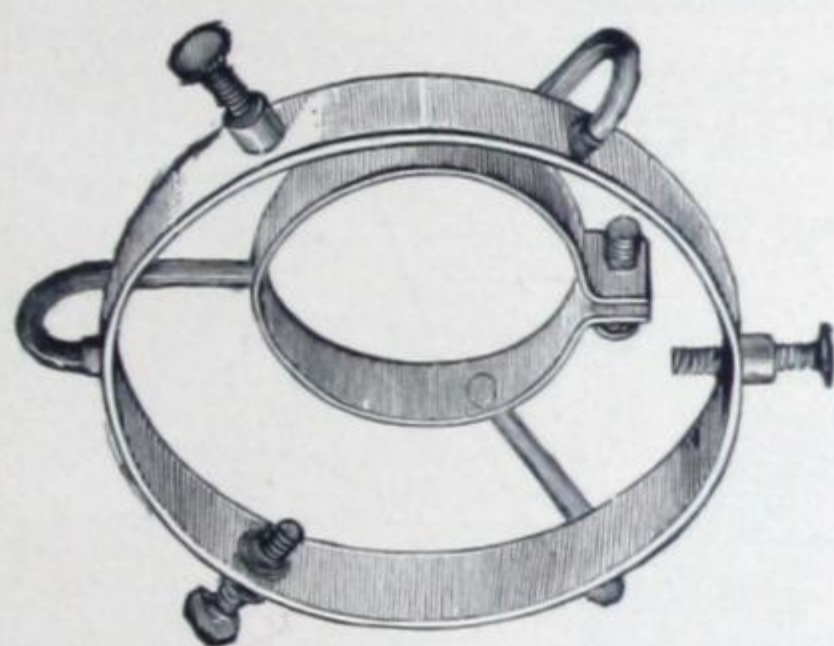
No. 1404 1/2.

Improved Socket Clamp Molder.

FINISHED IN POLISHED BRASS AND GOLD.

2 1/4 Inch,-----Per Gross, \$17.50
3 1/4 "-----"-----" 22.50

In Ordering Clamp Holder, State Name of Filament Lamp in Use.



No. 1402.

Clamp Socket Shade Molder.

2 1/4 Inch,-----Per Gross, \$24.00
3 1/4 "-----"-----" 33.50
4 "-----"-----" 37.50
5 "-----"-----" 45.00

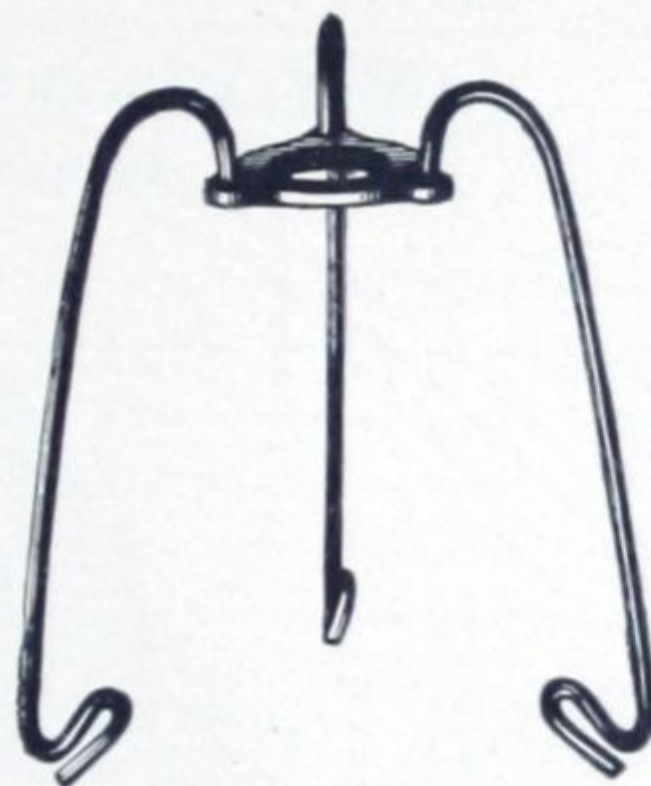
In Ordering Clamp Holders, State Name Filament Lamp in Use.

Separable Finishing and Sliding Canopy.

FINISHED IN POLISHED BRASS OR GOLD, COVERING TRIPODS AND INSULATING JOINTS.

3 Inch, for 1/8 to 3/8 Iron Pipe, or 3/8 to 3/4 Brass Tube,-----Per Dozen, \$14.00
4 Inch, for 1/8 to 1/2 Iron Pipe, or 3/8 to 3/4 Brass Tube,-----Per Dozen, \$18.00
5 Inch, for 3/8 to 3/4 Iron Pipe, or 3/8 to 1 Brass Tube,-----Per Dozen, \$24.00
6 Inch, for 3/8 to 1 Iron Pipe, or 3/8 to 1 1/2 Brass Tube,-----Per Dozen, \$30.00

In Ordering, State Size of Pipe, Whether of Brass or Iron, Which it is to Slide Over.



No. 1405.

Tripod Molder.

Height, 3 Inches.

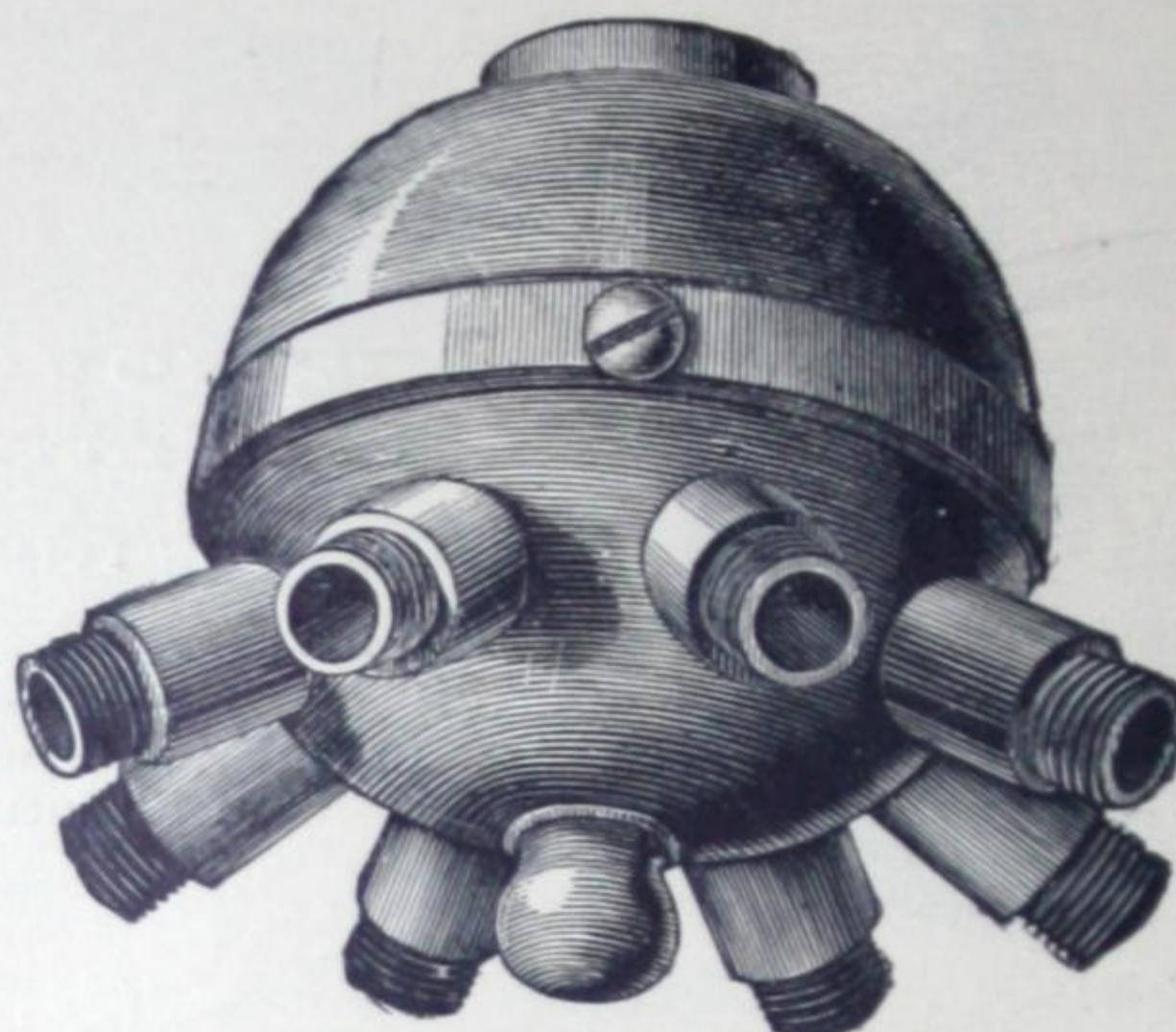
IN SIZES 2 1/4, 3 1/4 AND 4 INCHES. FITS 1/8 NOZZLE.

Price,-----Per Gross, \$8.75



No. 1332.

Brass Electric Cluster Balls.

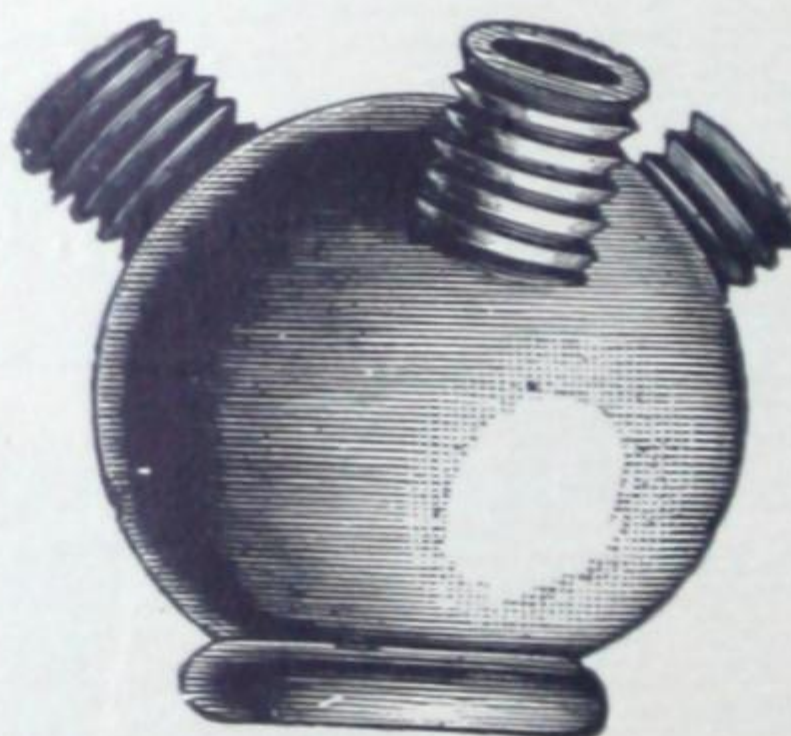


No. 1474 1/2.

Separable Ball Cluster.

Polished Brass. Tapped Any Size.

3 Light.	.....	Each, \$3.25
4 "	.....	" 3.50
6 "	.....	" 3.75
8 "	.....	" 5.00
10 "	.....	" 7.00
12 "	.....	" 10.00
15 "	.....	" 12.00



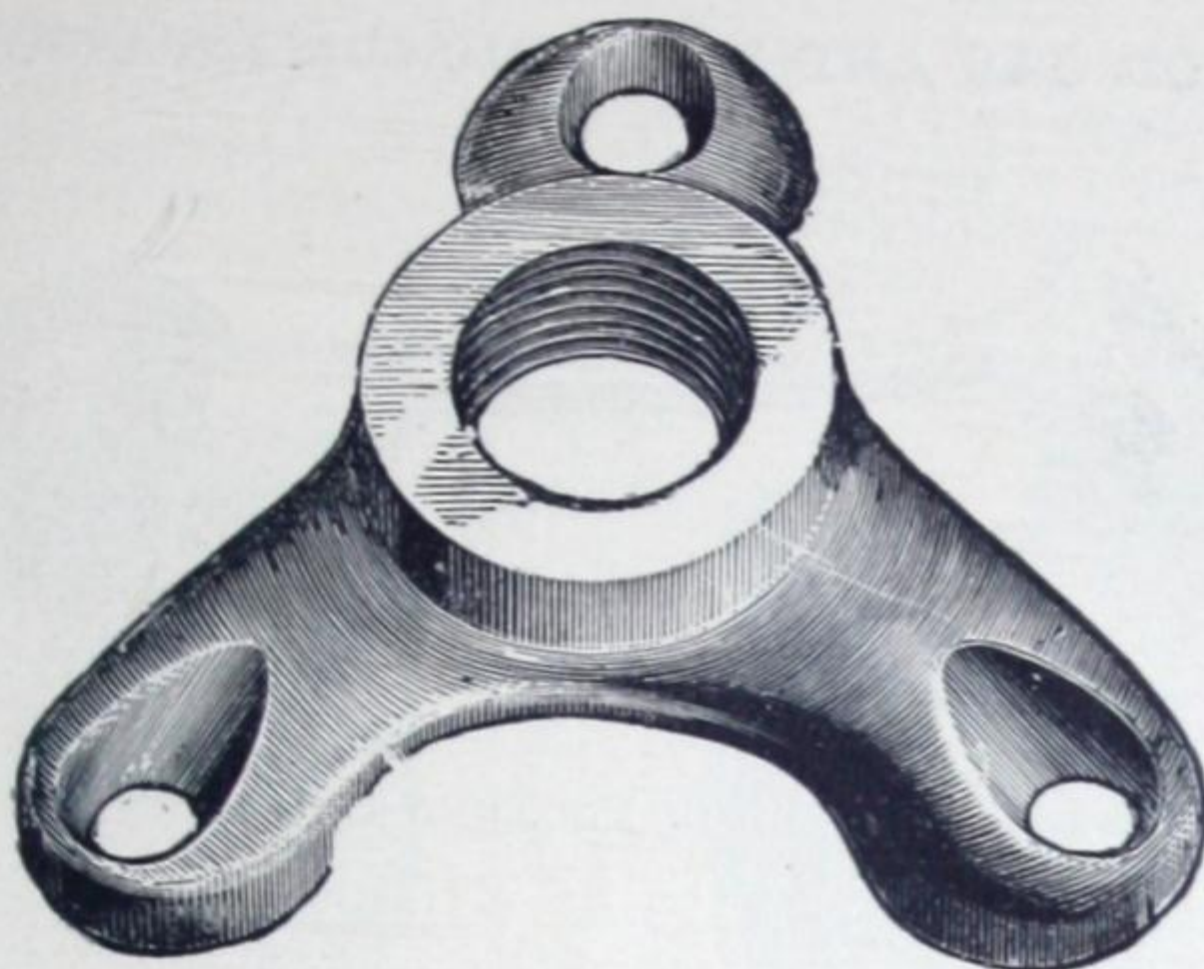
No. 1474.

Cluster Ball.

Finished in Polished Brass or Gold. From two to six light, tapped for any size.

2 Light.	.....	\$ .75
3 "	.....	1.00
4 "	.....	1.25
5 "	.....	1.70
6 "	.....	2.05

Electric Light Fittings.

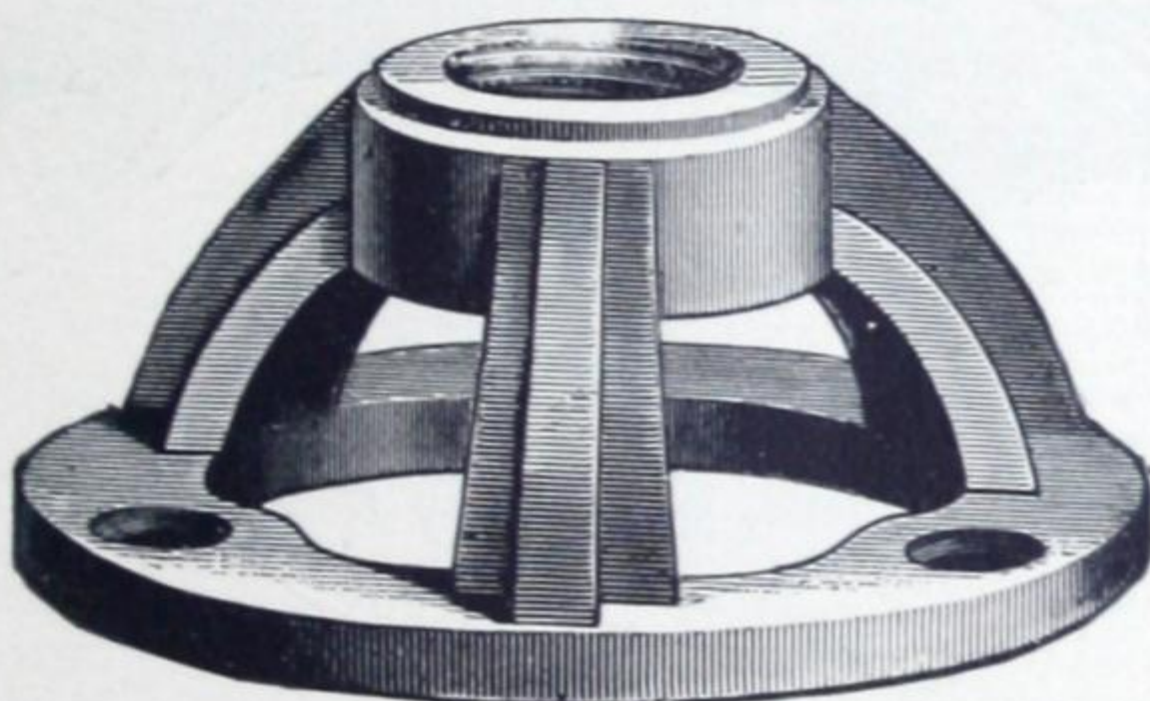


No. 1475.

Iron Crowfoot.

TAPPED FROM $\frac{1}{8}$ TO $\frac{1}{2}$ INCH IRON.

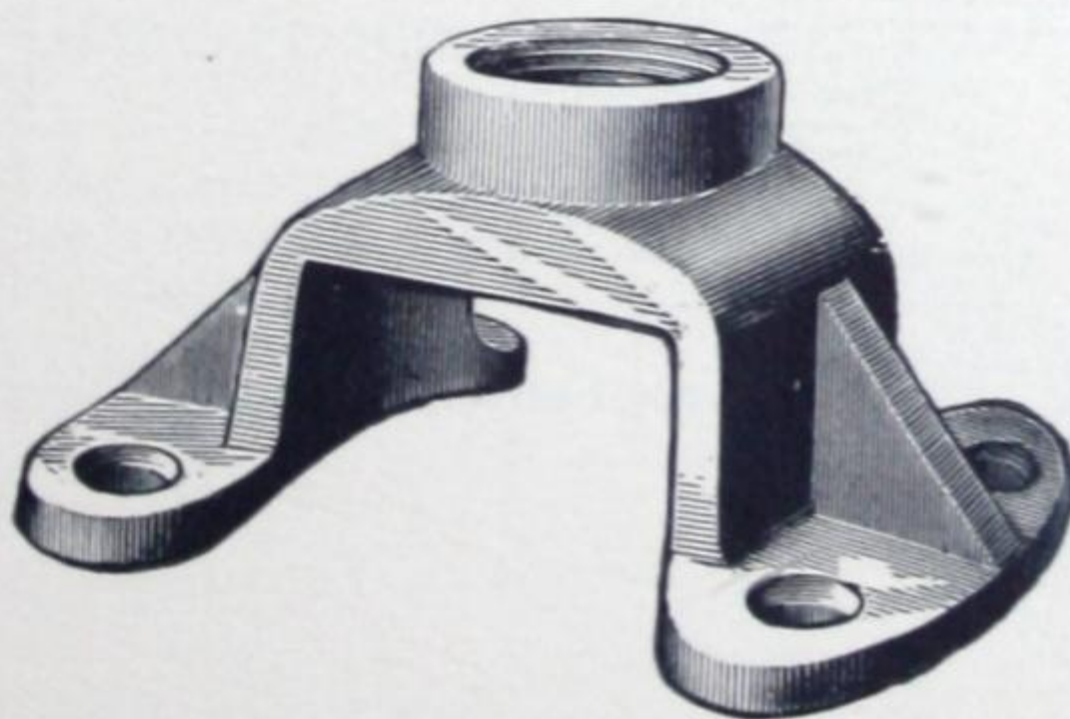
Per Dozen.....	\$0.70
Per 100.....	5.50



No. 1476.

Iron Tripod.

Per Dozen.....	\$0.75
Per 100.....	6.00



No. 1477.

Iron Deupod.

TAPPED FROM $\frac{1}{8}$ TO $\frac{1}{2}$ INCH.

Per Dozen.....	\$1.00
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Incandescent Lamp Attachment.

FOR GAS AND ELECTRIC COMBINATION.

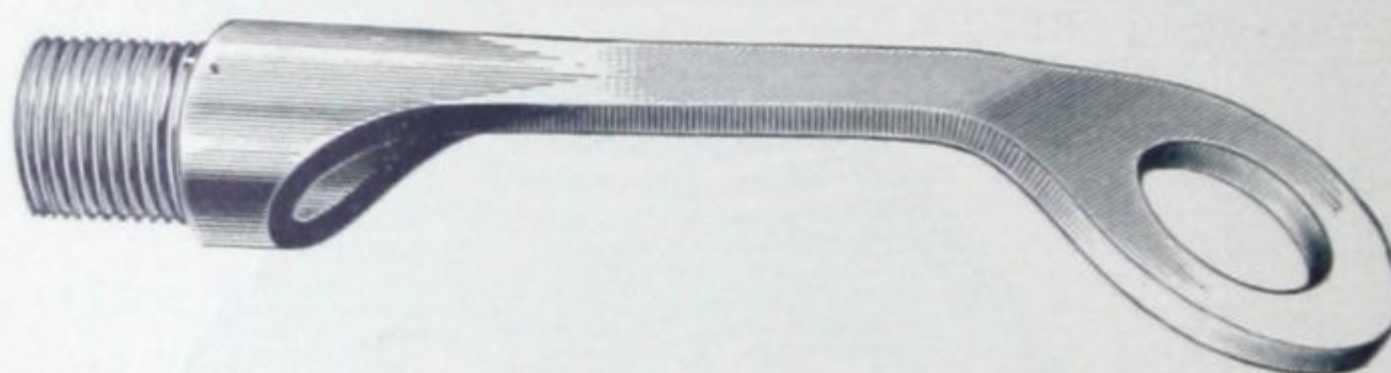


No. 1480.

FINISHED IN POLISHED BRASS.

Insulated.....	Per 100, \$15.00
Plain.....	" 10.00

These Attachments Grip the Base of the Gas Burner.

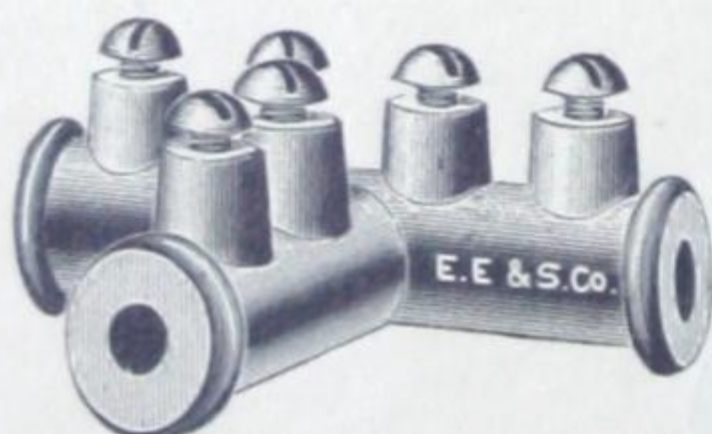


No. 1486.

FINISHED IN POLISHED BRASS.

Insulated.....	Per 100, \$13.00
Plain.....	" 8.00

Wire Connectors.



Three-Way.

Made in all Sizes.

Very Convenient.

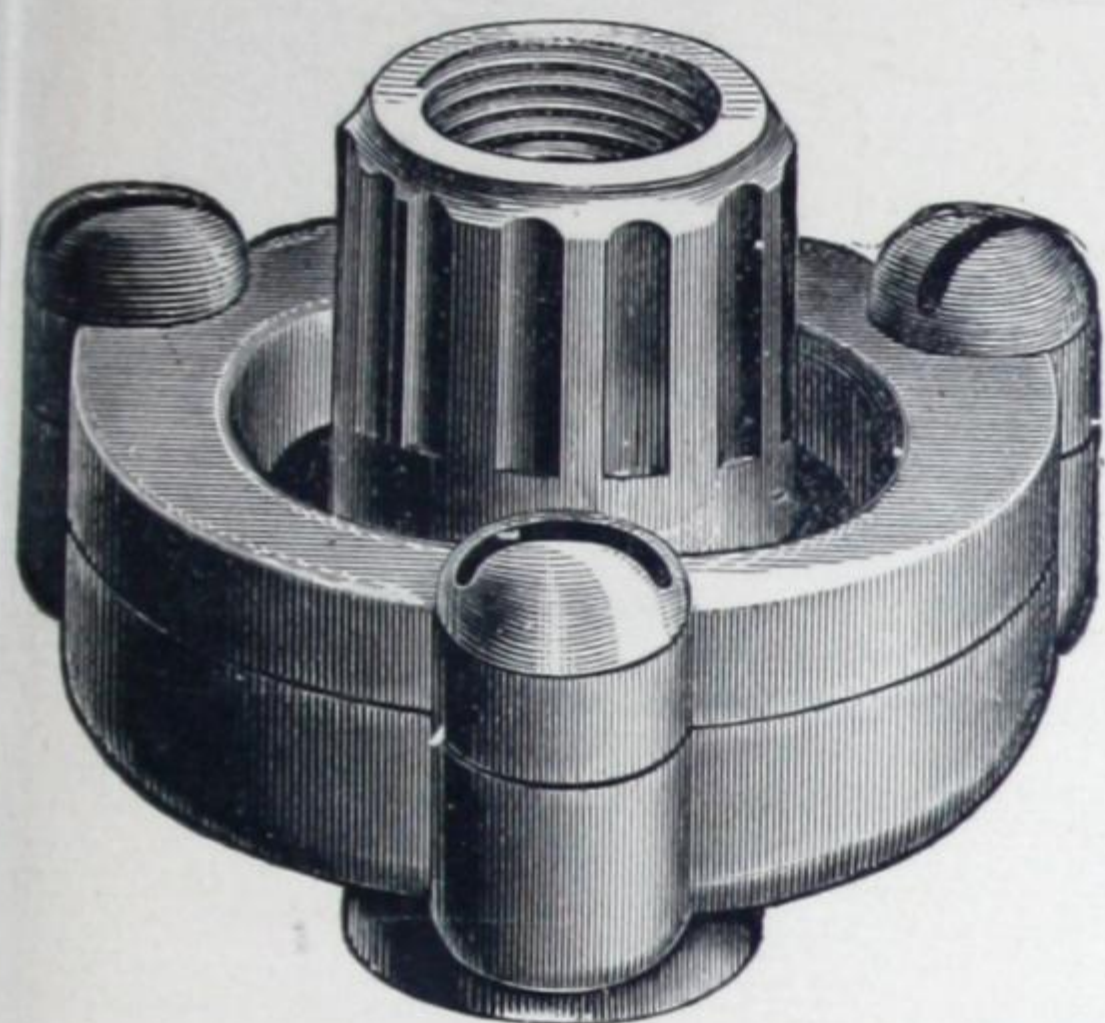


Straight-Way.

Price, Three-Way T, No. 0 & Smaller.....	\$0.50
" " L, " 0 " ".....	.40
" " Straight, No. 0 & Smaller.....	.20

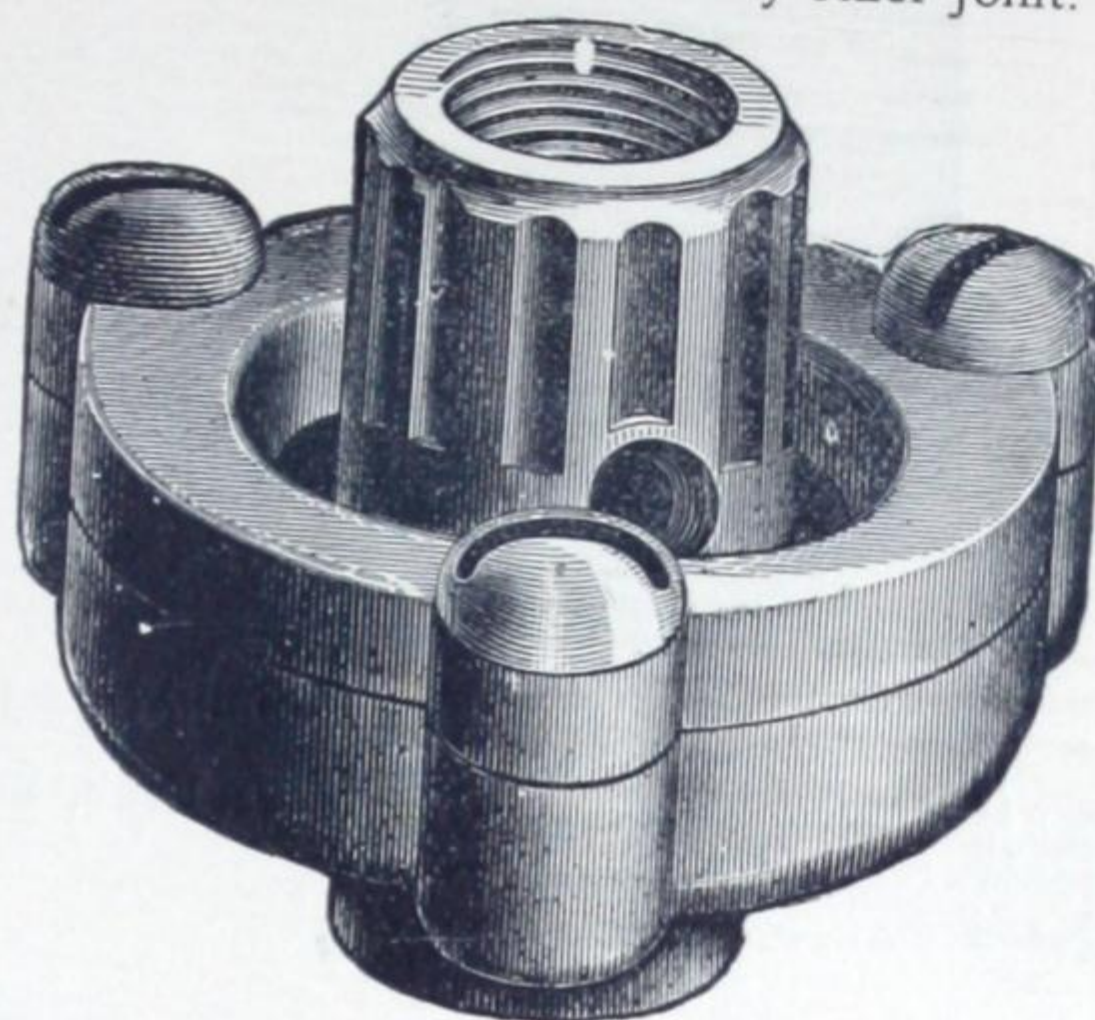
Insulated Joints.

Our Chandelier Insulating Joints are the standard, and are used where good work is desired. It is not only the strongest and heaviest Joint on the market, but the insulation and general construction is novel and workmanlike; cannot be strained or short-circuited in handling or use. The interior surface insulation (patented April 21, 1890), is used in all of our Chandelier Joints, effectively preventing short-circuiting by carbon or impurities in the gas. This feature is not found in any other Joint.



No. 1464.

For Combination Gas and Electric Fixtures.
Female Both Ends.



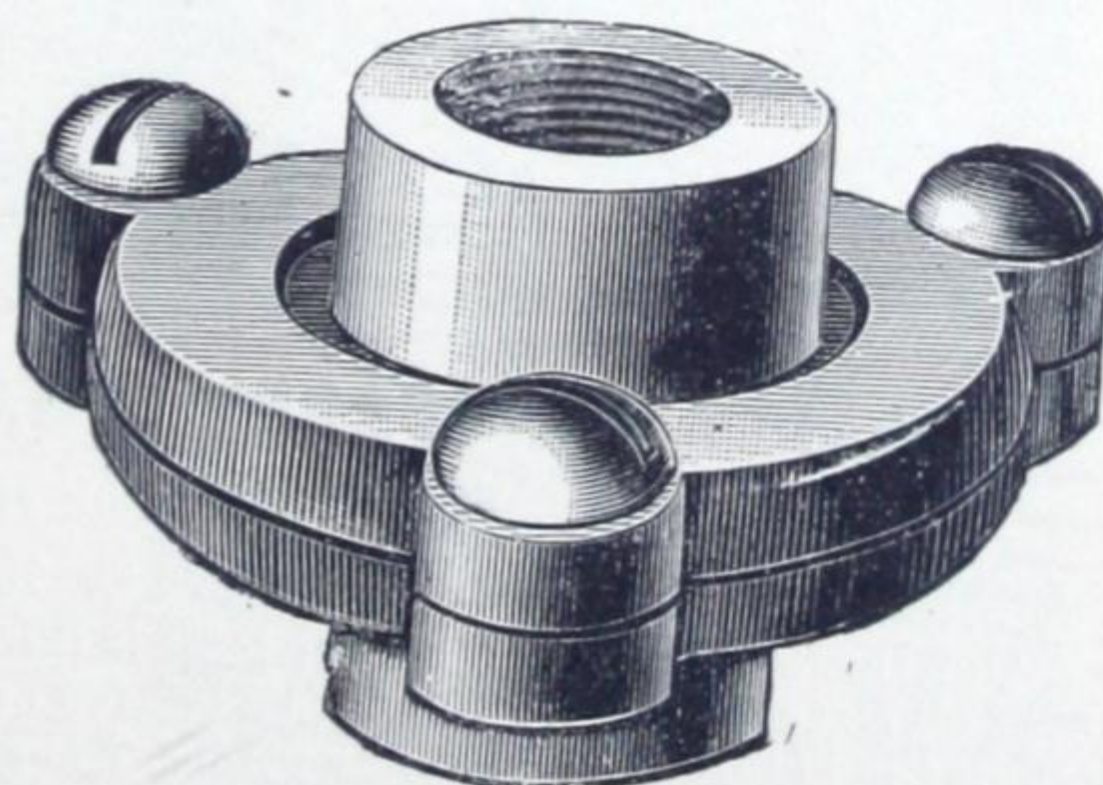
No. 1463.

For Electric Light Fixtures Only. Female Both Ends.

GALV. IRON.		BRASS.	
	Each, \$		Each, \$
$\frac{3}{4} \times \frac{1}{2}$	2.25	$\frac{3}{8} \times \frac{1}{8}$	2.25
$\frac{3}{4} \times \frac{3}{4}$	"	$\frac{3}{8} \times \frac{1}{4}$	2.25
$1 \times \frac{1}{2}$	"	$\frac{3}{8} \times \frac{3}{8}$	3.50
$1 \times \frac{3}{4}$	"	$\frac{1}{2} \times \frac{1}{8}$	3.50
1×1	"	$\frac{1}{2} \times \frac{1}{4}$	3.50
$1 \times 1\frac{1}{4}$	"	$\frac{1}{2} \times \frac{3}{8}$	3.50
$1\frac{1}{4} \times 1\frac{1}{4}$	"	$\frac{1}{2} \times \frac{1}{2}$	5.00
$1\frac{1}{2} \times 1\frac{1}{2}$	"	$\frac{3}{4} \times \frac{1}{8}$	10.00
2×2	"	$\frac{3}{4} \times \frac{1}{4}$	12.00
		$\frac{3}{4} \times \frac{3}{8}$	

FEMALE GALV. IRON.		BRASS.	
	Each, \$		Each, \$
$\frac{3}{8} \times \frac{1}{8}$	.75	$\frac{3}{8} \times \frac{1}{8}$	1.25
$\frac{3}{8} \times \frac{1}{4}$	.75	$\frac{3}{8} \times \frac{1}{4}$	1.25
$\frac{3}{8} \times \frac{3}{8}$	.75	$\frac{3}{8} \times \frac{3}{8}$	1.25
$\frac{1}{2} \times \frac{1}{8}$	1.00	$\frac{1}{2} \times \frac{1}{8}$	1.40
$\frac{1}{2} \times \frac{1}{4}$	1.00	$\frac{1}{2} \times \frac{1}{4}$	1.40
$\frac{1}{2} \times \frac{3}{8}$	1.00	$\frac{1}{2} \times \frac{3}{8}$	1.40
$\frac{1}{2} \times \frac{1}{2}$	1.00	$\frac{1}{2} \times \frac{1}{2}$	1.40
$\frac{3}{4} \times \frac{1}{8}$		$\frac{3}{4} \times \frac{1}{8}$	2.25
$\frac{3}{4} \times \frac{1}{4}$		$\frac{3}{4} \times \frac{1}{4}$	2.25
$\frac{3}{4} \times \frac{3}{8}$		$\frac{3}{4} \times \frac{3}{8}$	2.25

Our Competition Joint embraces all the desirable insulating properties of our Standard Joint, but it is much lighter, has ordinary screws, and will do for Brackets and Pendant. While it is not as strong and solid as the Standard Joint, it is superior to the "cheap" joints which are being offered to the trade, and whose main feature is "cheapness."



No. 1464A.

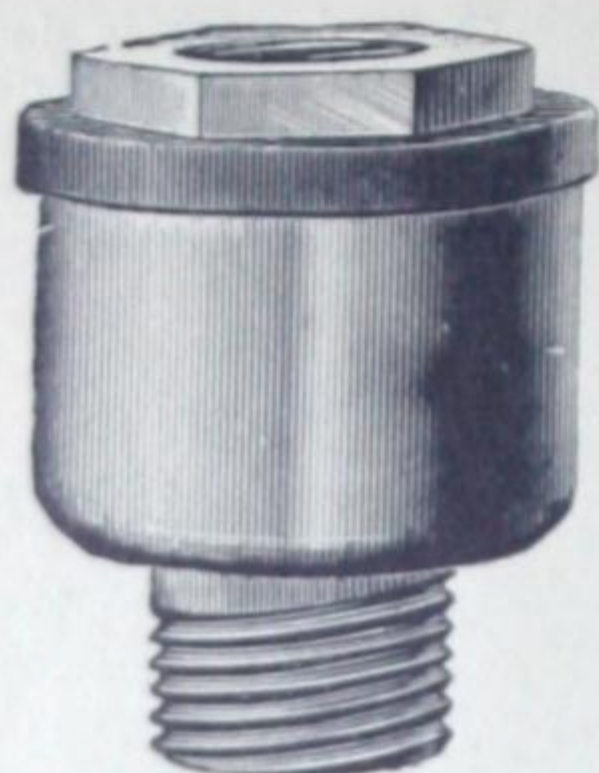
Competition Insulated Joint.

(Patented Nov. 22, 1887, and April 22, 1890.)

$\frac{3}{8} \times \frac{1}{8}$	Each, \$0.90
$\frac{3}{8} \times \frac{1}{4}$	" 0.90
$\frac{3}{8} \times \frac{3}{8}$	" 0.90

In ordering, state whether for Combination or Electric Fixture.

Brass Bracket Insulated Joint.



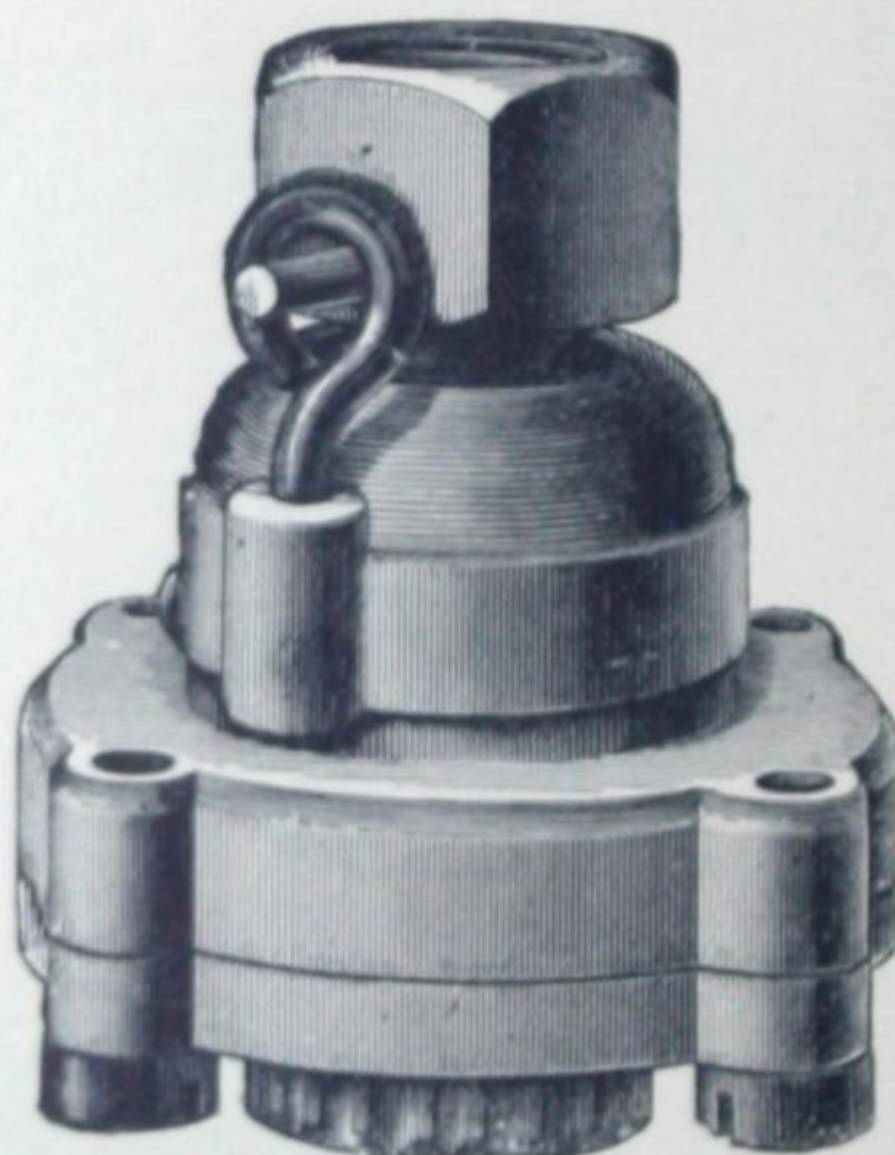
No. 1465 1/2.
Male and Female.



No. 1465.
Female Both Ends.

FOR COMBINATION GAS AND ELECTRIC BRACKETS.

1/2 x 1/8	Each, \$0.90	3/8 x 1/8	Each, \$0.70
1/2 x 1/4	". .90	3/8 x 1/4	". .70
1/2 x 3/8	". .90	3/8 x 3/8	". .70



No. 1466.

BALL AND SOCKET CHANDELIER INSULATED JOINT.

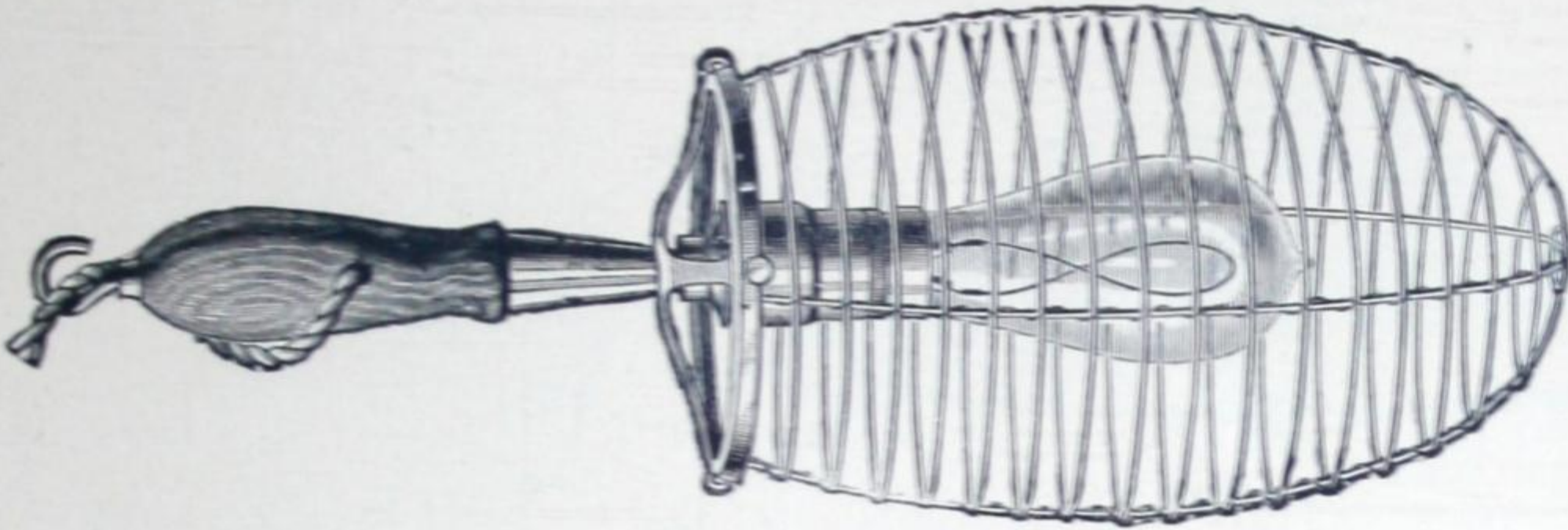
FOR COMBINATION GAS AND ELECTRIC FIXTURE.

(Patented 22, 1887, and April 22, 1890.)

Our Insulated Ball and Socket Joint is the strongest made, warranted Gas and Electric "proof" under all circumstances. Cannot be twisted or short-circuited, and body is so arranged that while it permits the fixture to hang at any ordinary angle, it will not let the fixture turn and rupture wire. By unscrewing plug nipple, the fixture can be hung without turning or twisting it, the upper part of the socket joint doing the turning. When tightened into place reinsert the screw plug. (Patent allowed.)

3/8 x 1/4	Each, \$2.50	3/4 x 1/2	Each, \$4.50
3/8 x 3/8	". 2.50	3/4 x 3/4	". 4.50
1/2 x 1/4	". 2.80	1 x 1/2	". 7.00
1/2 x 3/8	". 2.80	1 x 3/4	". 7.00
1/2 x 1/2	". 2.80	1 x 1	". 7.00
3/4 x 3/8	". 4.50		

Wire Guards.

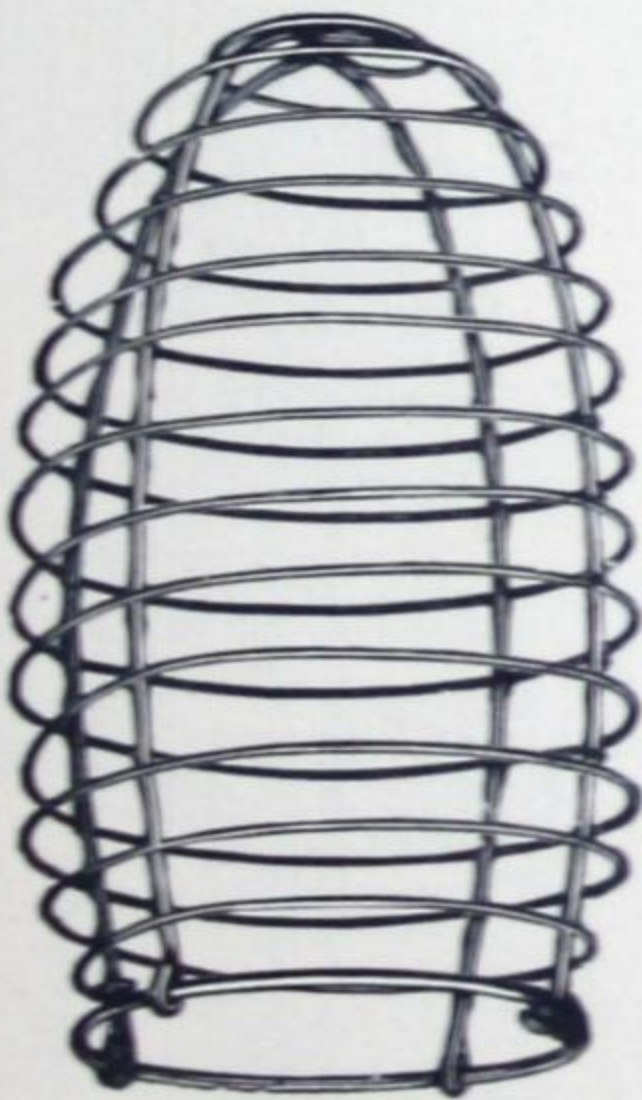


No. 1897.

Portable Hand-Lamp Guard.

Showing Wire Guard and Holder, with Handle, Hook, Socket and Lamp Attached for Use with Flexible Cord. Fits any 16 C. P. Lamp.

Each, Less Lamp and Socket,-----\$1.40

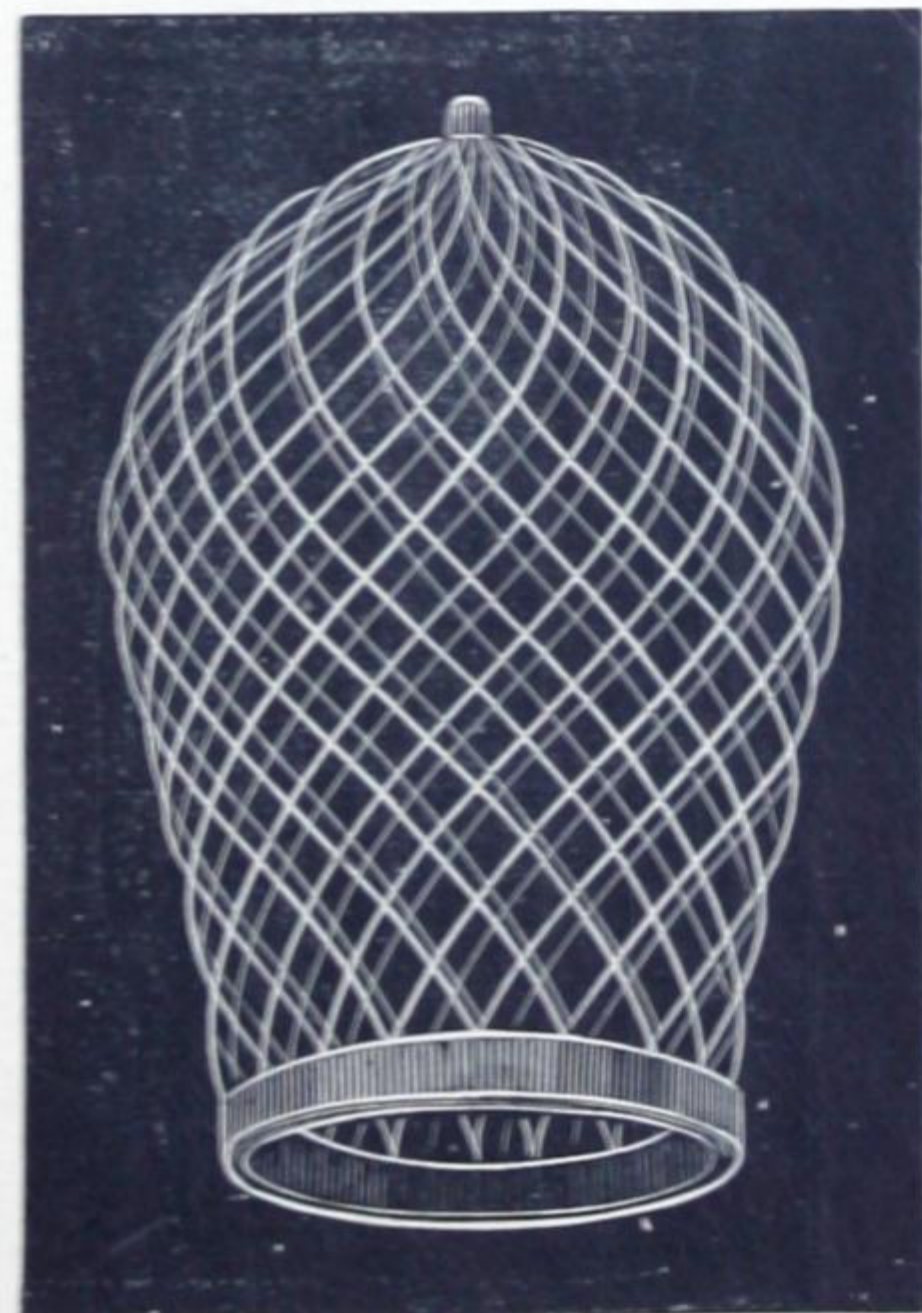


No. 1902.

Tinned Wire Guard.

Diameter, $4\frac{1}{2}$ Inches. Height, 7 Inches; $3\frac{1}{4}$ in Holder.

Per Doz.-----\$3.50



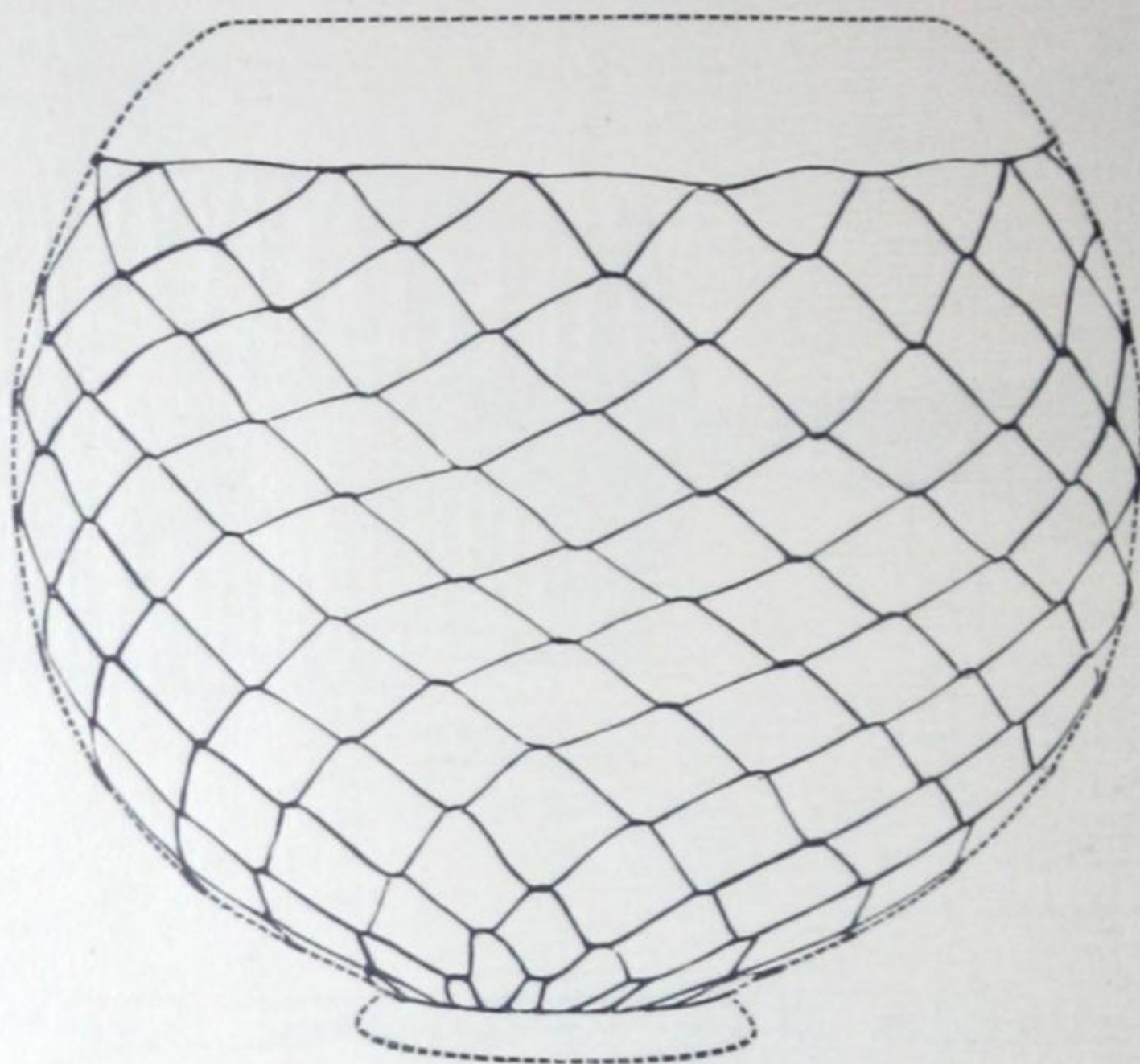
No. 1902 $\frac{1}{2}$.

Tinned Wire Guard,

This Guard is Very Strong and Flexible.

Per Doz.-----\$300.

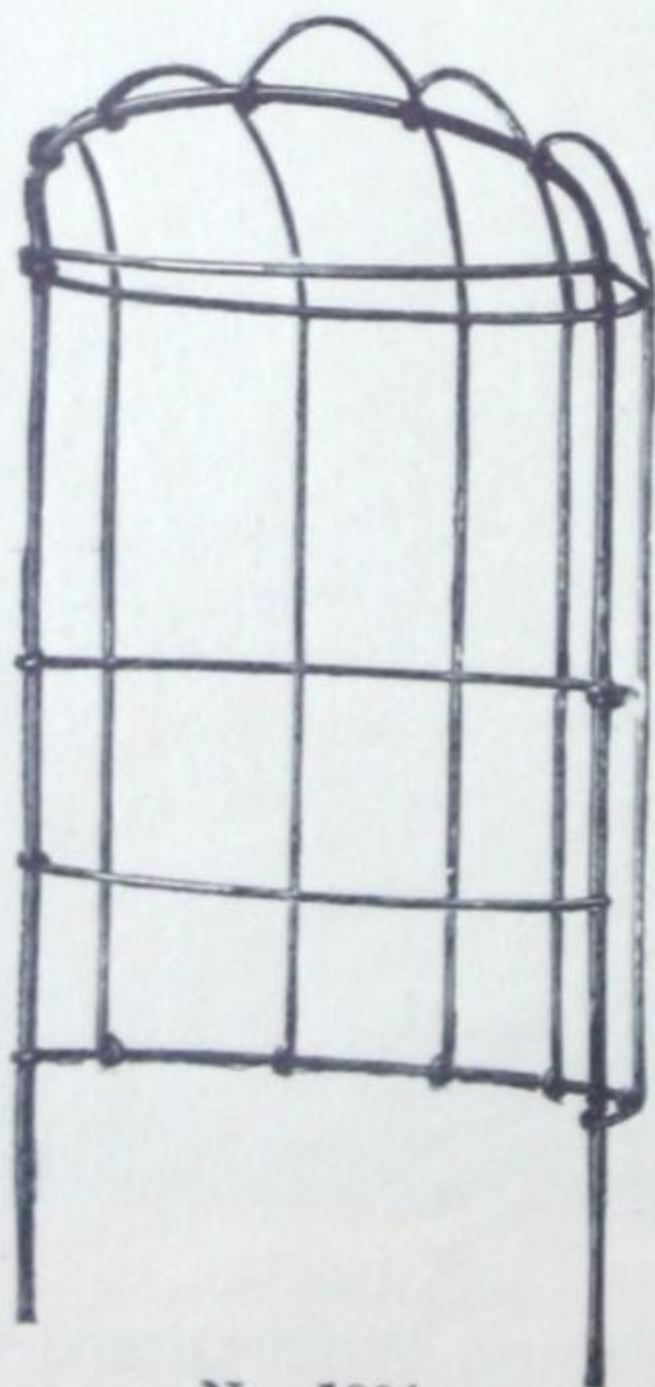
Wire Guards and Globe Nets.



No. 1917.

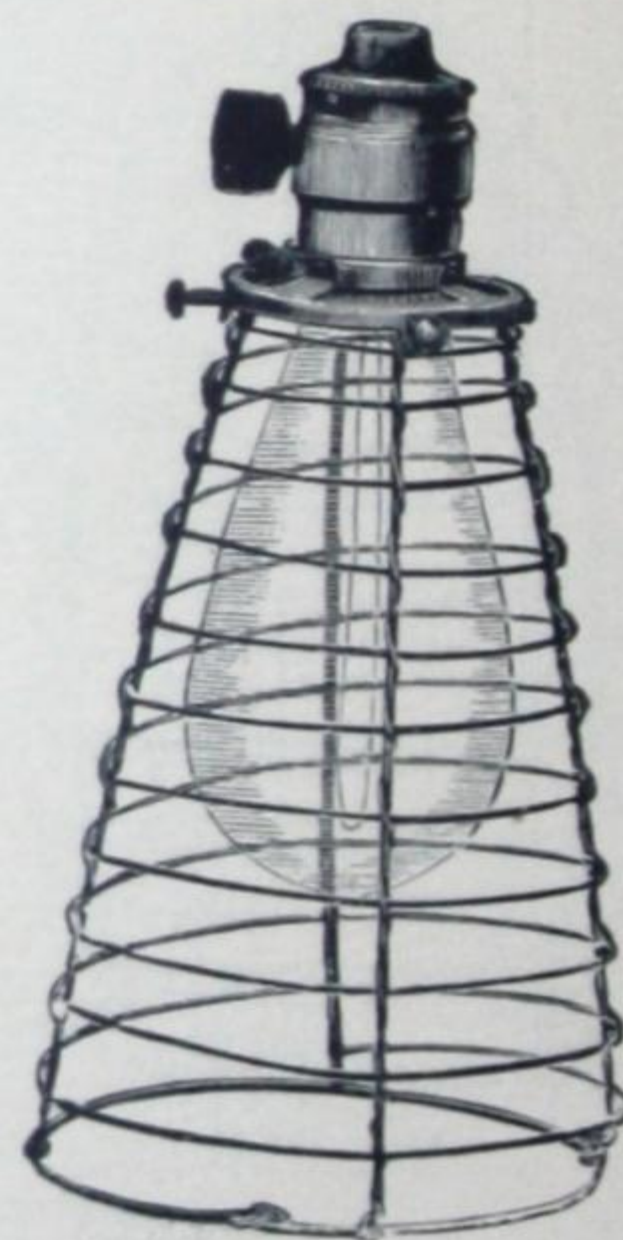
Used in compliance with the Board of Fire Underwriters. In case of breakage of the Arc Lamp Globe, when in position, it prevents fragments of glass falling, securely holding the broken globe together until such time as it can be replaced.

Price, ----- Each, \$0.25



No. 1904.

Wire Guard For Footlight Screens.
5½x11 Inches, ----- Per Dozen, \$7.00

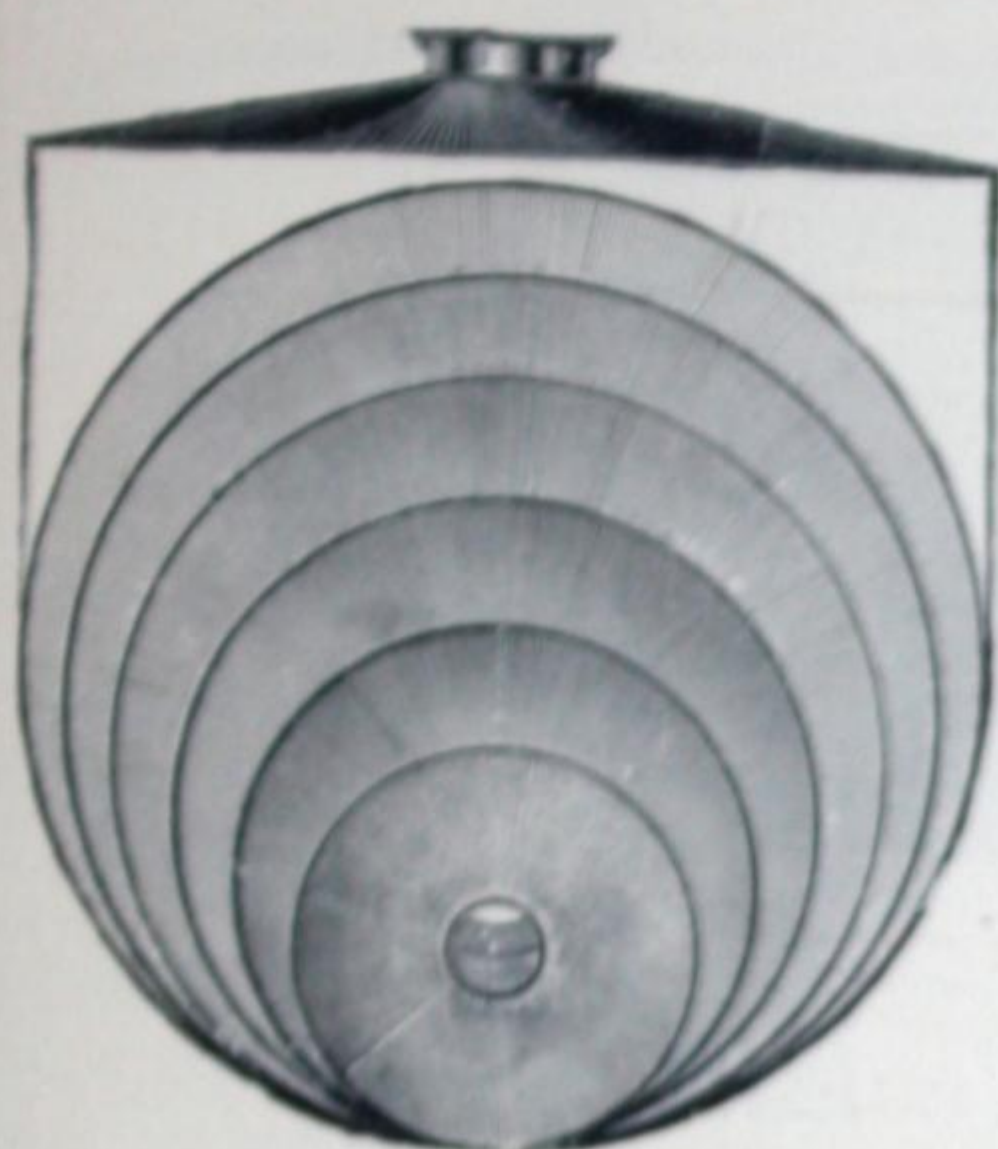


No. 1899.

Tinned Wire Stand Guard For
Incandescent Lamp.

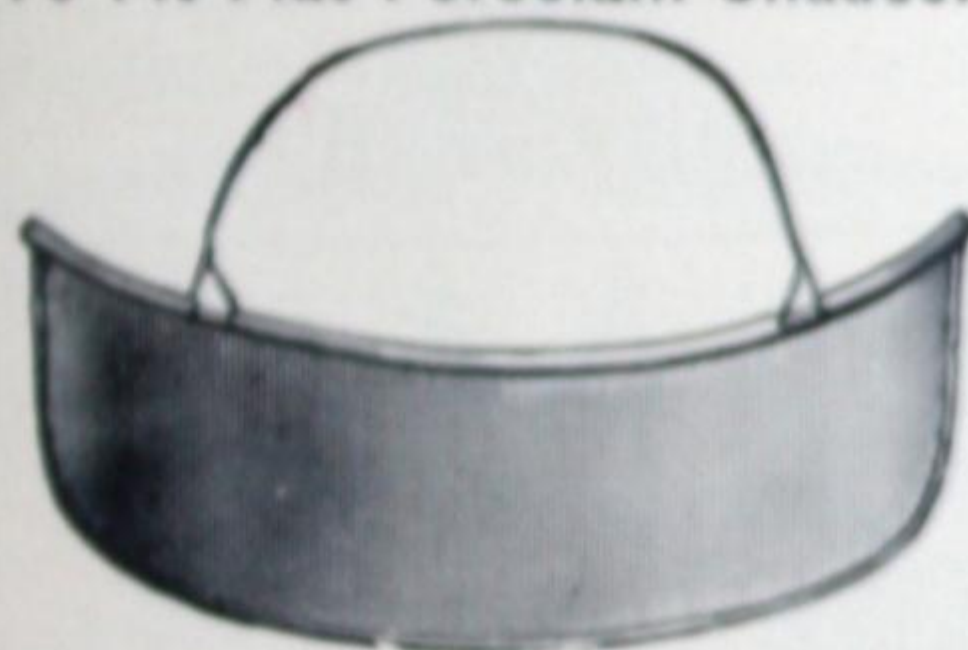
Diameter, 4½ inches; height, 7 inches.
Per Doz., less Lamp, Holder and Sockets, \$3.50

Tin Shades---Enameled.



No. 1798.

Flat Tin Enameled Shades.
For $2\frac{1}{4}$ or $3\frac{1}{4}$ Inch Holder.
To Fit Flat Porcelain Shades.



No. 1809.



No. 1804 $\frac{1}{2}$ B.

Metal Half Reflector Shade.

With Hinged Wire Guard.

Fits any $2\frac{1}{4}$ in. Holder. For 16 C. P. Lamp.
Painted Green Outside. White
Enameled Inside.

No. 1798	8 Inch	Per Dozen,	\$2.65
" "	10 "	"	3.15
" "	12 "	"	4.10
" "	14 "	"	5.55
" "	16 "	"	7.30
" 1809		"	5.00
" 1804 $\frac{1}{2}$ B.		"	9.00

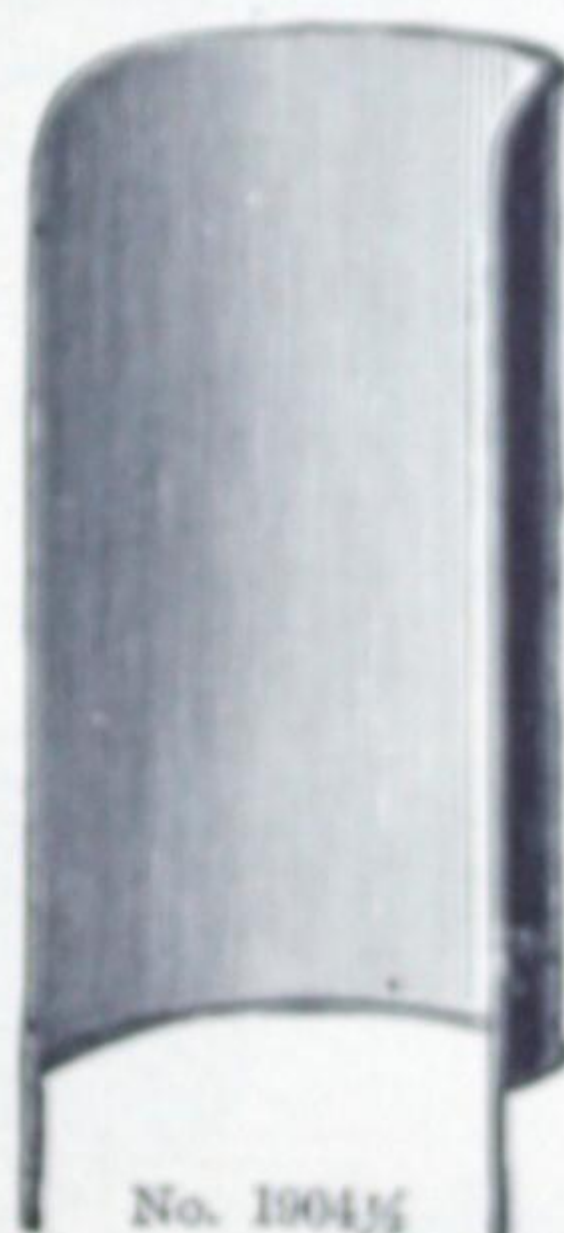


No. 1799.

Deep Cone Tin Shade.

Enameled Green Outside, Glossy Enameled
White Inside. Fits $3\frac{1}{4}$ Inch Holder. Can
be made to fit any other size Holder.

Tin Footlight Screen.



No. 1904 $\frac{1}{2}$

White Inside. Green Outside.



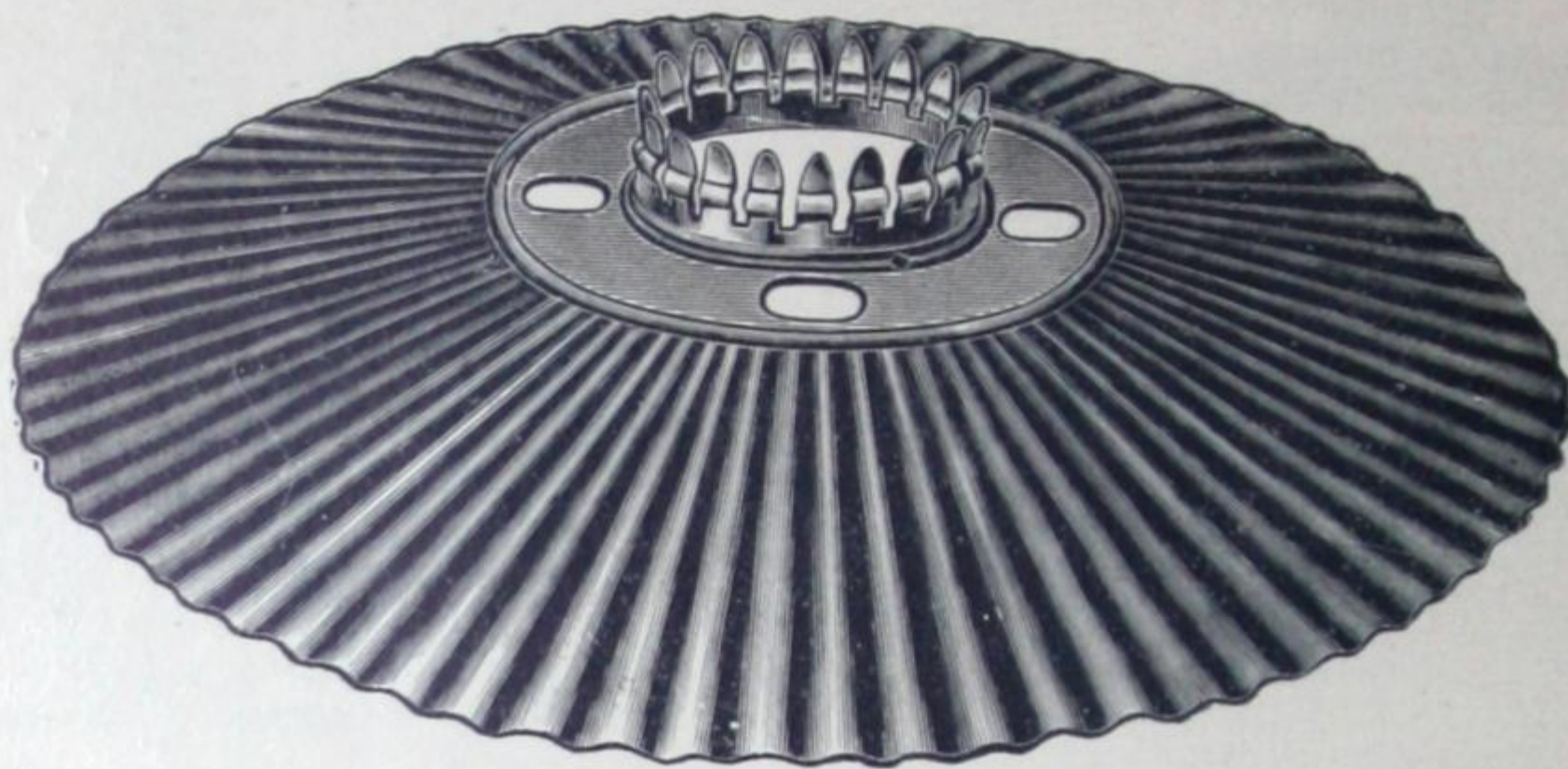
No. 1804 $\frac{1}{2}$ A.

Metal Half Reflector Shade.

Fits any $2\frac{1}{4}$ in. Holder. For 16 C. P. Lamp
Enameled Green Outside. White
Enameled Inside.

No. 1799	8 Inch	Per Dozen,	\$4.55
" "	10 "	"	5.25
" "	12 "	"	6.30
" 1904 $\frac{1}{2}$	5x11 "	"	6.00
" 1804 $\frac{1}{2}$ A.		"	6.00

Combination Tin Shades.

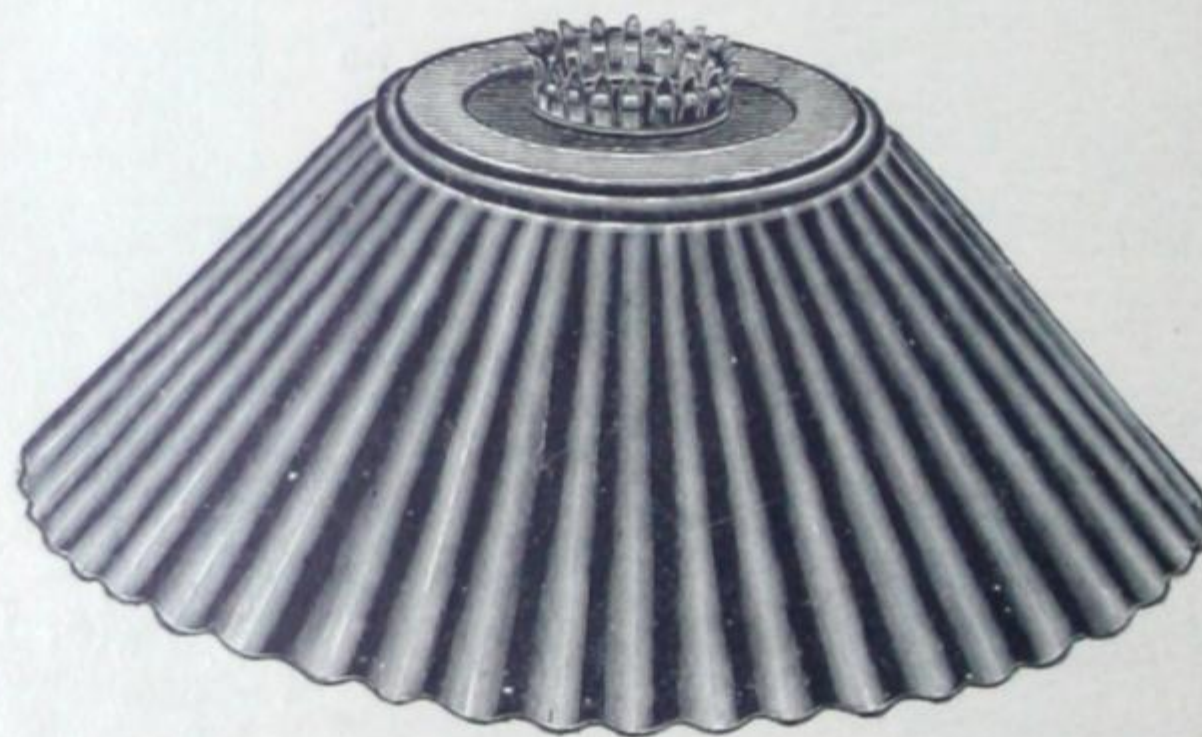


No. 1798 C.

Combination Tin Shade.

Is made to clamp Thomson-Houston, Westinghouse or Sawyer-Man sockets directly, so that no shade holder is required. Being fastened firmly to the socket, it always hangs square, and the disagreeable trembling so common with shade holders is avoided. This Combination Tin Shade is especially adapted for all places where shades are liable to be broken, such as stores, factories, mills, etc.

Price, ----- Each, \$0.25



No. 1798½ C.

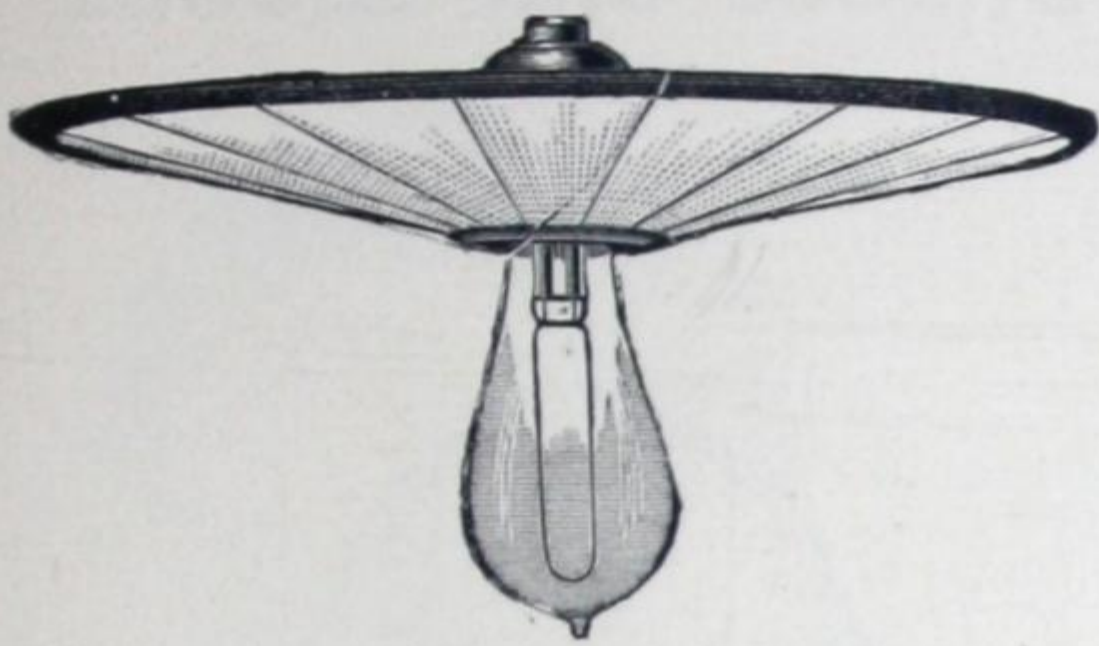
Combination Cone Shade.

GREEN ON TOP, BRIGHT TIN INSIDE.

This form of the Combination Shade is the best shade of the kind for draftsmen, engravers, and others who want a Reflector that will concentrate the light and shade the eyes.

Price, ----- Each, \$0.50

Reflectors, Etc.

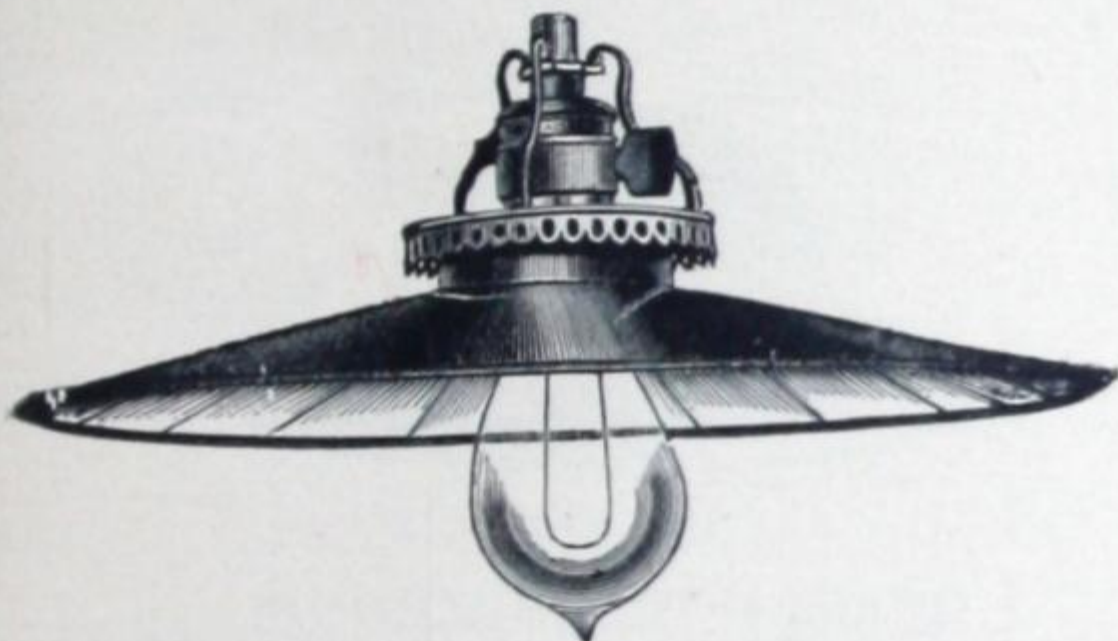


No. 20310.

Silver-Plated, Mirror-Reflector.

Convex, reflecting slightly below the horizontal in all directions. Used in Stores, etc., for general illumination. For Shade-Holders $2\frac{1}{4}$ and $3\frac{1}{4}$ in. diameter. Fitted for any other Holders upon order.

10 Inch,	-----	Each, \$1.10
12 "	-----	" 1.25
14 "	-----	" 1.40
16 "	-----	" 1.80
18 "	-----	" 2.25



Thomson-Houston System.

No. 2310.

Brush-Swan System.

SILVER-PLATED, MIRROR-REFLECTOR.

A flat Cone, for use with any system of Incandescent Electric Light where it is desired to spread the light considerably. Its silver-plated mirror-plate lining makes it most effective and pleasing, and always as good as new. In ordering, state what system used, and size of Collar desired, or Holder used.

Reflectors, 10 Inch,	-----	Each, \$1.00	Reflectors, 16 Inch,	-----	Each, \$1.60
" 12 "	-----	" 1.12½	" 18 "	-----	" 2.00
" 14 "	-----	" 1.25			



Sawyer-Man System.

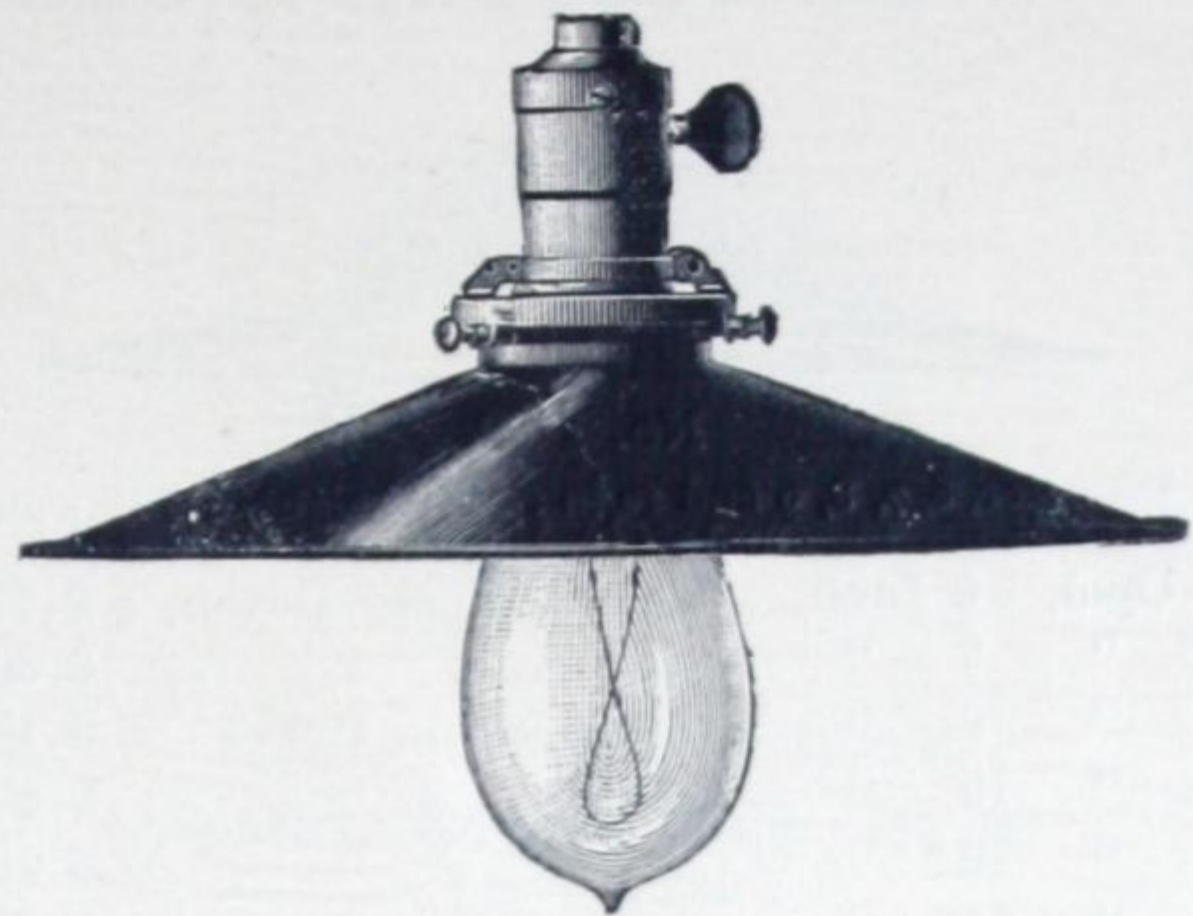
No.

Edison System.

SILVER-PLATED, MIRROR-REFLECTOR.

A deep Cone, for use with any system of Incandescent Light where it is desired to concentrate a very powerful light in a small space. Most valuable over Machines, Work Benches, Type Cases, etc.

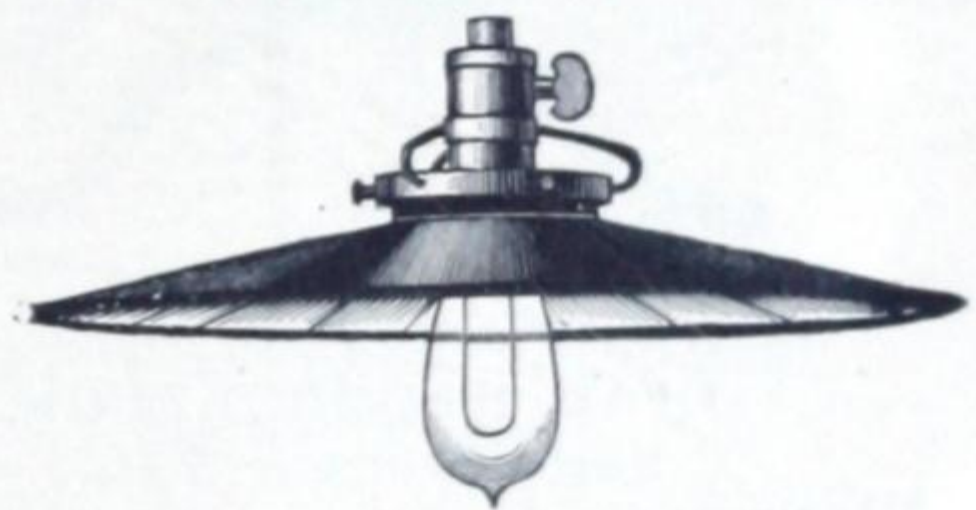
Reflectors, 10 Inch,	-----	Each, \$1.10	Reflectors, 12 Inch,	-----	Each, \$1.25
In ordering, state size of Holder.					



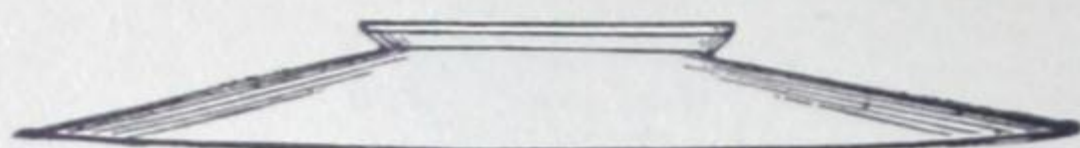
No. 2302.

Green Outside, White Inside. Three sizes, all seamless. For Shade-Holders $2\frac{1}{4}$ and $3\frac{1}{4}$ inches in diameter. Also to order for the Edison or other sockets, without using any Shade-Holder.

8 Inch,	-----	Per Dozen, \$3.50
10 "	-----	" 4.50
12 "	-----	" 6.00



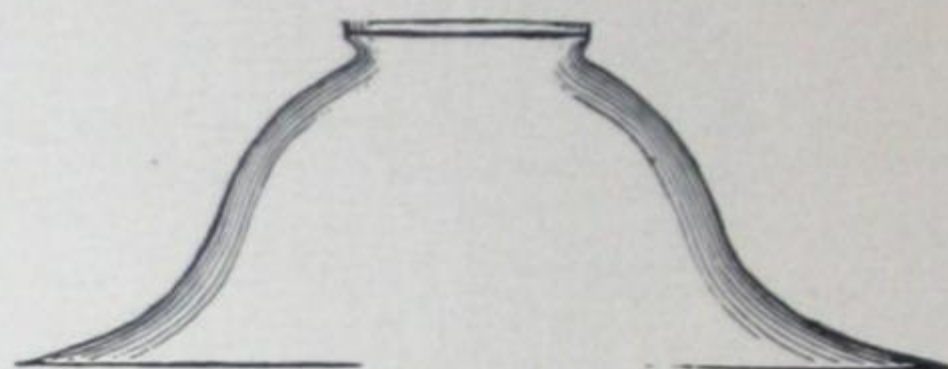
Incandescent Electric Shades and Globes.



No. 1168.

Diameter, 6, 7, 8, 9 and 10 in., etc.; height, 1½ in.; 2¼ and 3¼ in. Holder.

Opal,	6 Inch,	-----	Per Dozen,	\$ 2.75
"	7 "	-----	"	3.00
"	8 "	-----	"	3.10
"	10 "	-----	"	3.40
"	12 "	-----	"	6.25
"	14 "	-----	"	7.00
"	16 "	-----	"	10.00
"	18 "	-----	"	15.00
"	20 "	-----	"	18.00
"	22 "	-----	"	26.00



No. 1162.

Diameter, 6, 7, 8 in.; height, 3 in.; 2¼ and 3¼ in. Holder.

Opal Glass, 6 Inch,	-----	Per Dozen,	\$3.00
"	7	-----	" 3.10
"	8	-----	" 3.60



No. 1158.

OPAL, NOTCHED EDGE.

Height, 3 in.; 2¼ in. Holder.

5 Inch,	-----	Per Dozen,	\$2.80
6 "	-----	"	3.00
7 "	-----	"	3.10
8 "	-----	"	3.60
10 "	-----	"	4.80



No. 1122.

OPAL, NOTCHED EDGE.

(Fits Edison Socket.)

5 Inch,	-----	Per Dozen,	\$2.80
6 "	-----	"	3.00
7 "	-----	"	3.10
8 "	-----	"	3.60

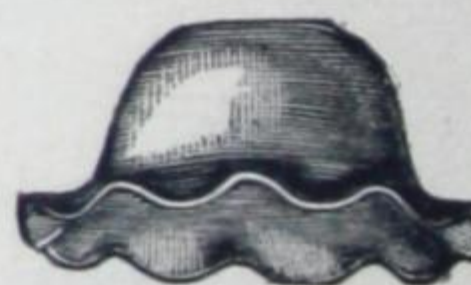


No. 1101.

DEEP OPAL CRIMPED SHADE.

2¼ in. Holder

5 Inch in Diameter,	-----	Per Dozen,	\$3.00
6 "	-----	"	3.00
7 "	-----	"	3.50
8 "	-----	"	4.00
10 "	-----	"	6.00



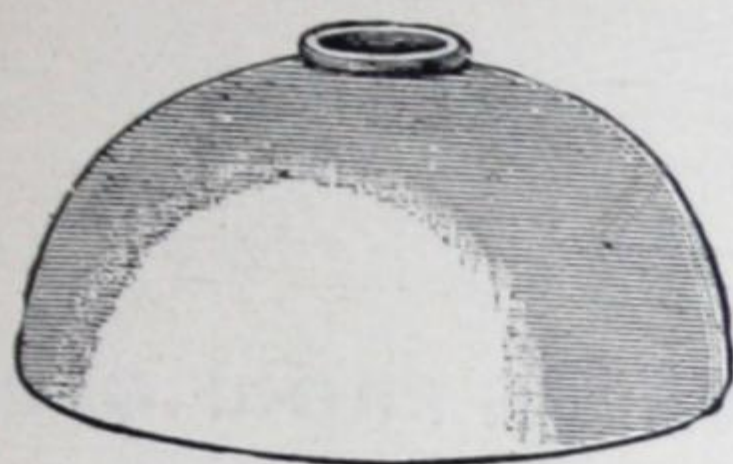
No. 1119.

OPAL, SCALLOPED EDGE.

(Fits Edison Socket.)

5 Inch Opal	-----	Per Dozen,	\$3.00
6 "	-----	"	3.10
7 "	-----	"	3.30
8 "	-----	"	3.60

Incandescent Electric Shades.



No. 1141.

OPAL DOME.

Diameter, 8 and 10 in.; height, $4\frac{1}{2}$ in.;
 $2\frac{1}{4}$ and $3\frac{1}{4}$ in. Holder.

8 Inch.....	Per Dozen, \$3.50
10 ".....	" 4.20

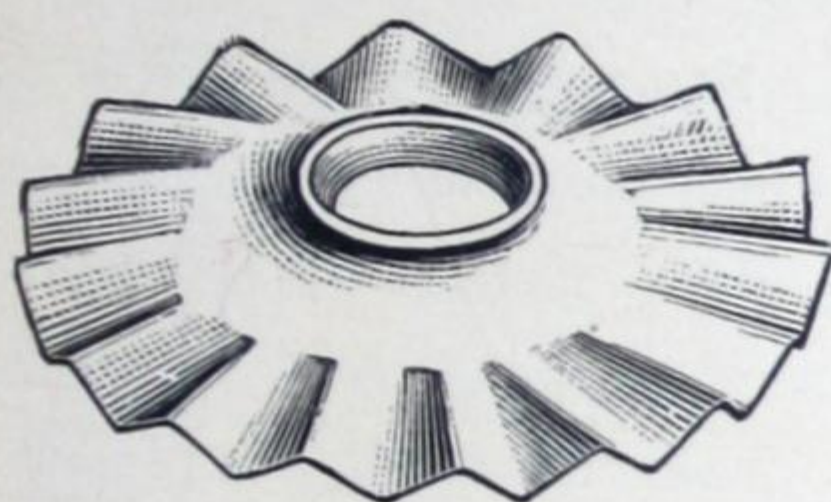


No 1142.

OPAL SCALLOPED EDGE.

Diameter, $7\frac{1}{2}$ in.; height, $3\frac{1}{2}$ in.;
4 in. Holder.

Per Dozen.....	\$3.50
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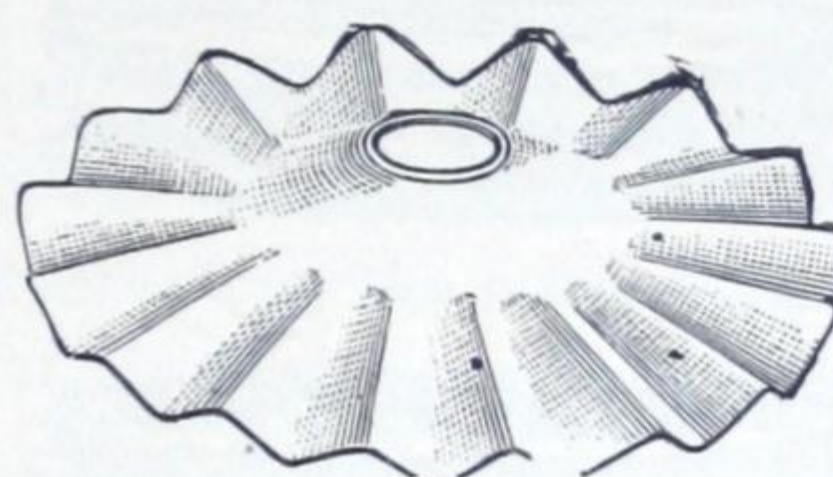


No. 1100.

FLAT OPAL, CRIMPED SHADE.

$2\frac{1}{4}$ or $3\frac{1}{4}$ in. Holder.

6 in. Diameter.....	Per Dozen, \$3.10
7 ".....	" 3.30
8 ".....	" 3.60
10 ".....	" 4.80
12 ".....	" 7.00



No. 1121.

FLAT OPAL, CRIMPED SHADE.

Fits Edison Socket.

6 in.....	Per Dozen, \$3.10
7 ".....	" 3.30
8 ".....	" 3.60
10 ".....	" 4.80

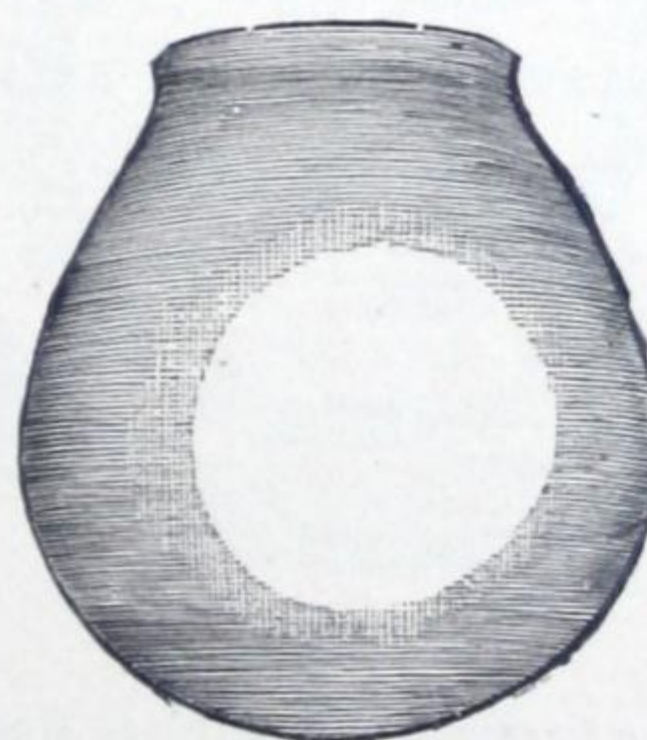


No. 1155.

OPAL, SCALLOPED EDGE.

$2\frac{1}{4}$ in. Holder.

5 Inch.....	Per Dozen, \$2.05
6 ".....	" 2.20
7 ".....	" 2.40
8 ".....	" 2.65
10 ".....	" 3.50



No. 1234.

OPAL SNOW BALL.

Diameter, 5 in.; height, 6 in.;
 $3\frac{1}{4}$ in. Holder.

Per Dozen.....	\$4.40
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Vapor and Weather Proof Globes.

WEATHER PROOF GLOBE.

($\frac{3}{8}$ IRON PIPE)

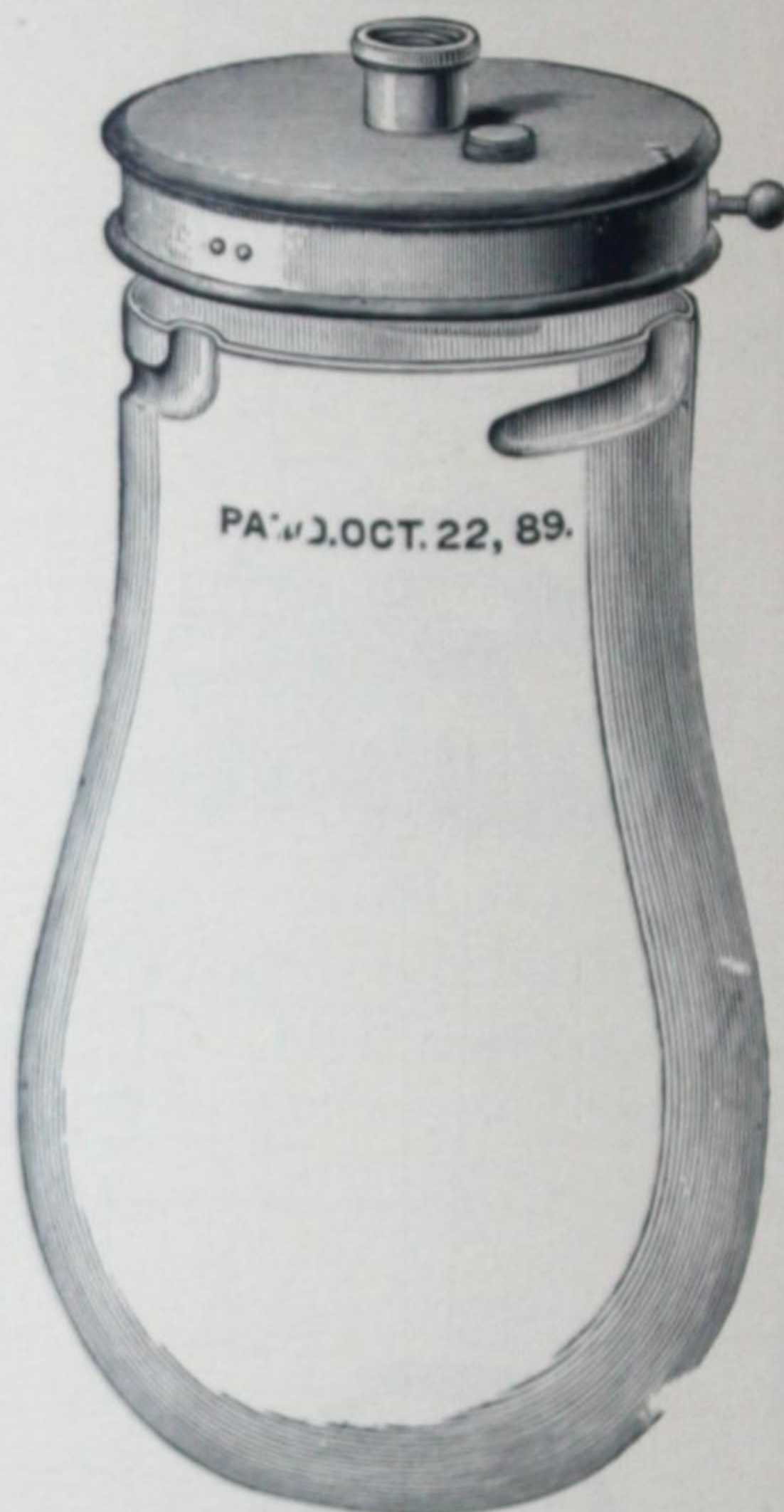


No. 1942.

With Brass Screw Cap Complete Ready for Use, Without Socket.

Complete, as shown.....	Each, \$1.10
Screw Globe Only .....	.. .50
Brass Caps.....	.. .60

PATENT VAPOR PROOF GLOBE.



No. 1942 $\frac{1}{2}$.

Diameter, 6 in.; height, 9 in.

Each	\$2.00
------------	--------

Our cover is provided with a vent which opens by internal pressure, but which is tightly closed against water, steam, vapor, or any other pressure from without. No matter how hot the lamp runs, there is never any extra pressure on the glass.

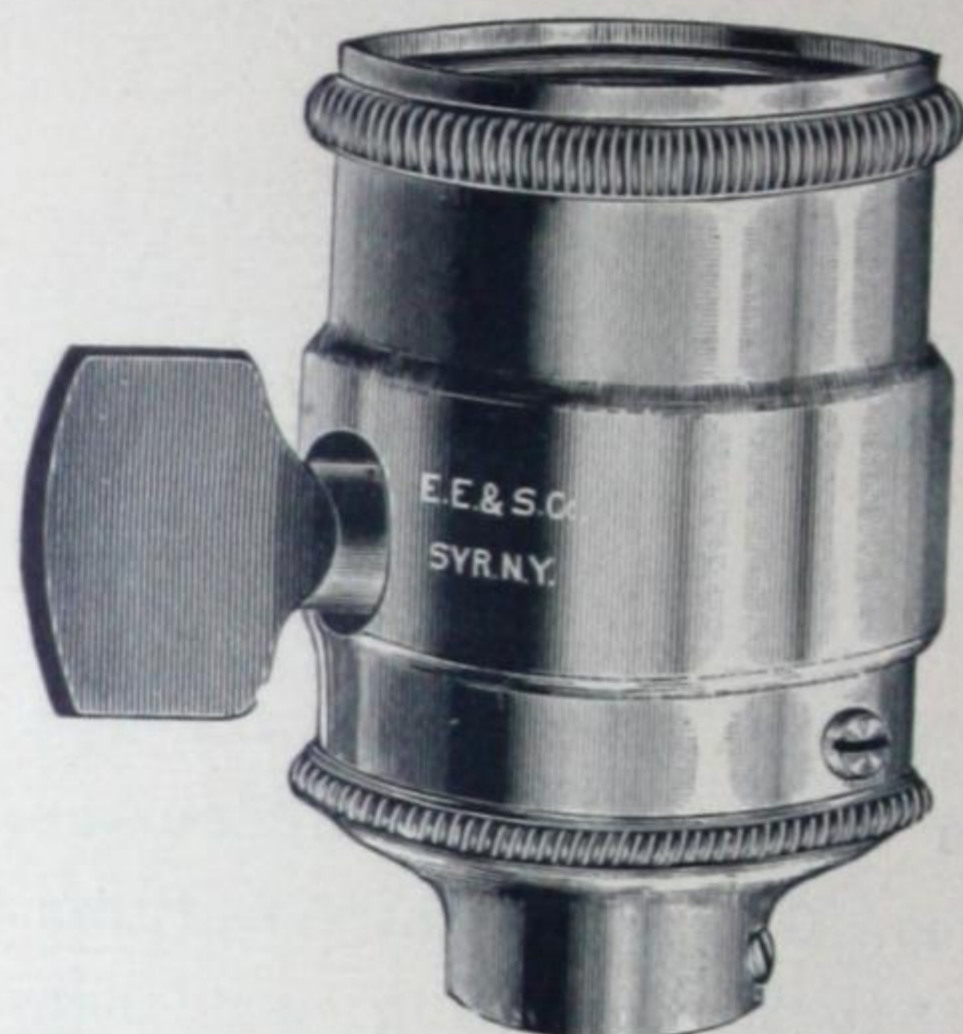
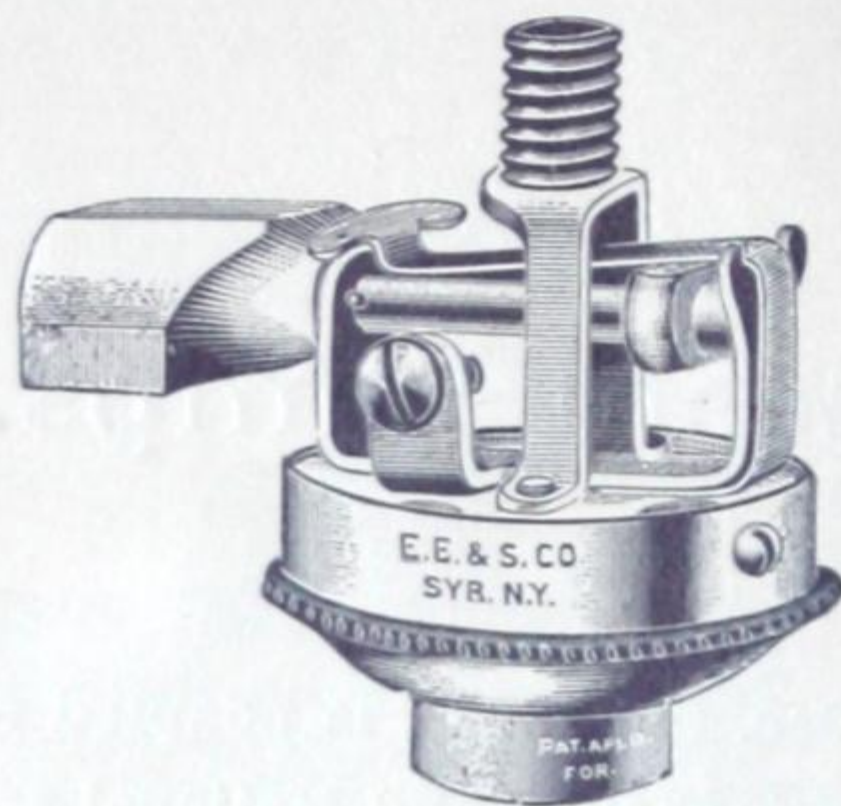
Sockets for Incandescent Lamps.

Our E. E. & S. Lamp Socket (Patented Dec. 29, 1891), is adapted for use with the Thomson-Houston, Edison, Westinghouse and National systems. One of the chief features wherein it differs from the other Sockets is that the insulating parts consist entirely of air spaces, and a peculiar quality of Porcelain, so tough, that the parts may be riveted to it. There is absolutely no fibre used. The "make" and "break" arrangements in the Key Socket are governed by a cam, which throws the Silicon Bronze contact spring, producing a wiping contact. The "make" is very positive and the "break" very sudden.

Another entirely new feature is the finely finished China Porcelain Key (Patented), trouble having been experienced to a considerable extent by the softening of hard rubber handles when exposed to high temperature. The shell and cap are made of heavy, highly polished brass. These can be furnished, when desired, in gold, silver, bronze, copper or other finishes, suitable for special work, at a slight advance in price over the ordinary finish. The combination of durability, neatness and simplicity effected in this socket makes its superiority evident.

Socket for Thomson-Houston System.

PATENTED DEC. 29, 1891.



This Lamp Socket is adapted for use with all lamps having a Thomson-Houston base. It has complete porcelain insulation. The lamp screw has a square shank where it sets into the bridge, so it cannot be detached, no matter how tight the lamp may be screwed on.

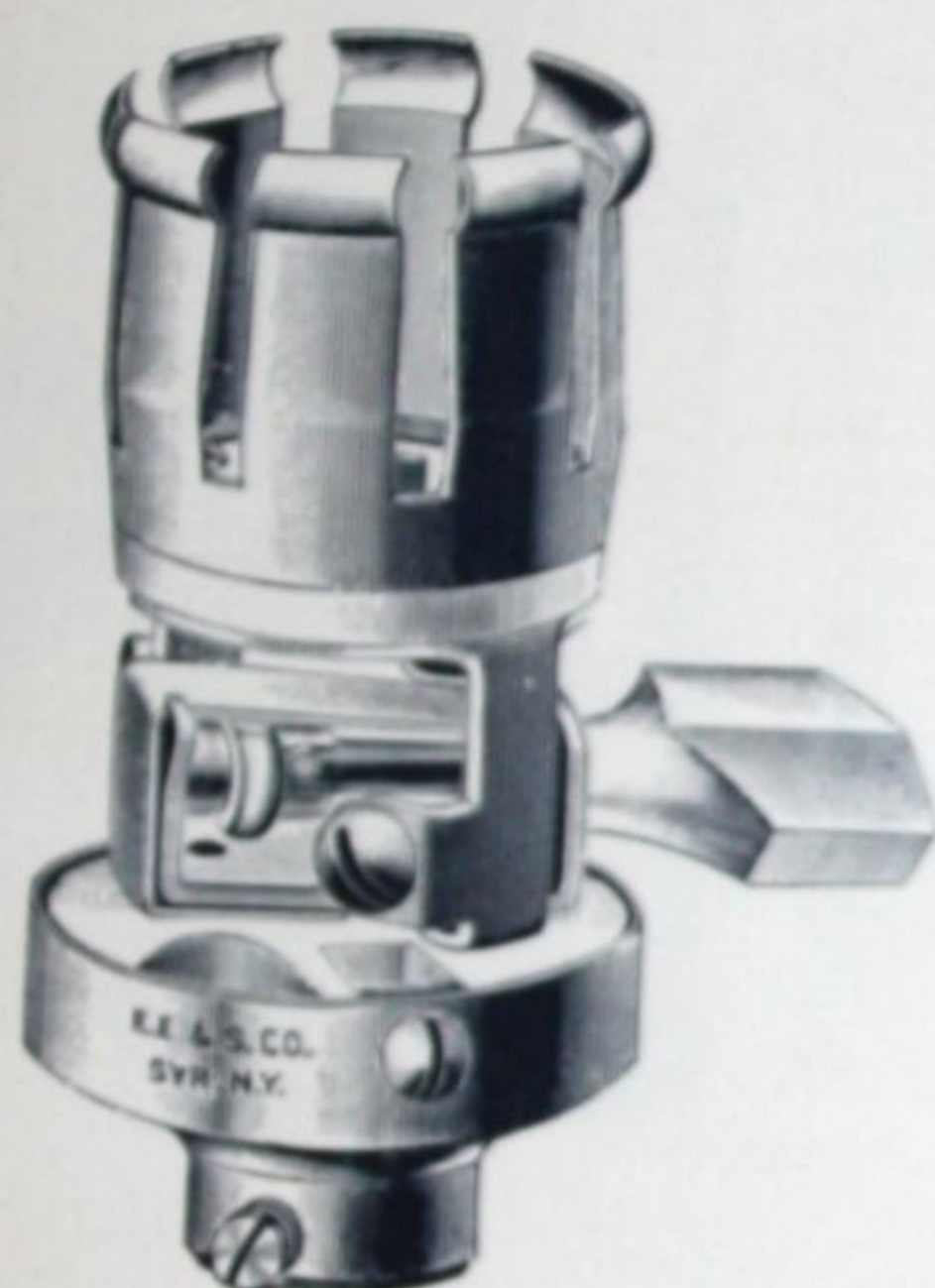
Key sockets furnished with our porcelain keys, or with hard rubber keys, as desired. Key and keyless Sockets constantly in stock.

PRICE LIST.

Key Sockets.....	each, \$0 50
Keyless Sockets.....	" 40

Socket for Westinghouse System.

PATENTED DEC. 29, 1891.



The Lamp Sockets for the Westinghouse System here displayed have a flat spring of liberal width, which is pressed upward to complete the circuit by a cam on a brass spindle; trouble having been experienced in the use of iron or steel spindles on account of rapid corrosion when exposed to moisture. There is a little lost motion in both the fastening of the cam to the spindle as well as in the key, which, no matter how slowly the key is turned, makes it impossible to make a slow "break," as the spring acts instantly and beyond the control of the hand. Key and Keyless Sockets made in similar style and constantly kept in stock. We furnish the former with our Patent Porcelain Key, or with Hard Rubber Key, as desired.

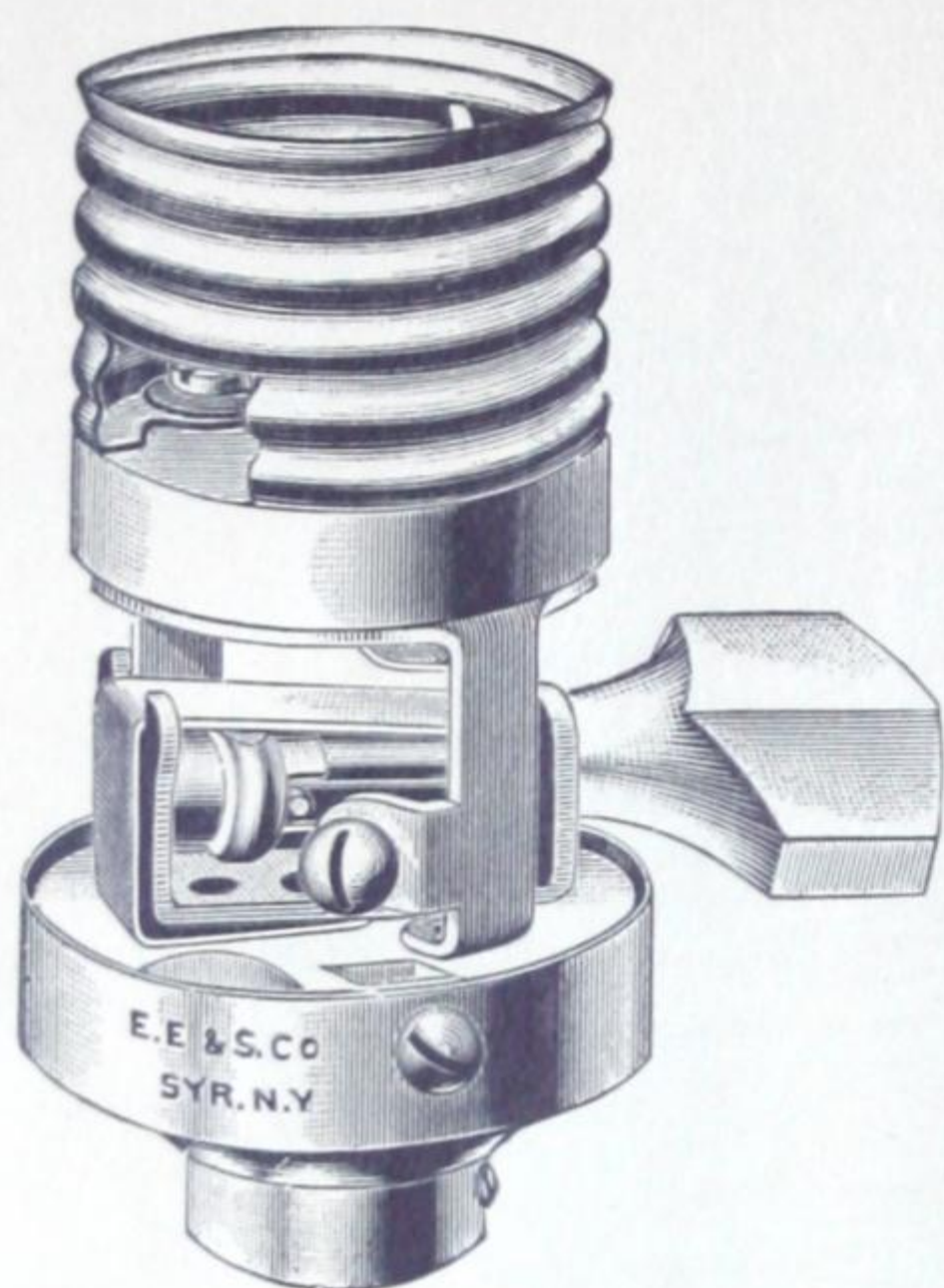
PRICE LIST.

Key Sockets.....	\$0 50
Keyless Sockets.....	40

ELECTRIC ENGINEERING & SUPPLY CO., SYRACUSE, N. Y.

Socket for Edison System.

PATENTED DECEMBER 29, 1891.



The movement operating to turn on and off the light in the Key Socket for the Edison System is identical with that of the Westinghouse Socket, but of course the contacts and arrangements for holding the lamp in place are adjusted to fit lamps with the Edison base instead of the Westinghouse.

The insulating piece or base supporting the entire structure of the socket and which is held in place in the cap by two screws which also clamp the outside brass shell, is of porcelain as well as the insulating piece between the upper and lower parts of the socket.

Key and Keyless Sockets in any quantities shipped promptly on orders.
We have both porcelain and hard rubber keys.

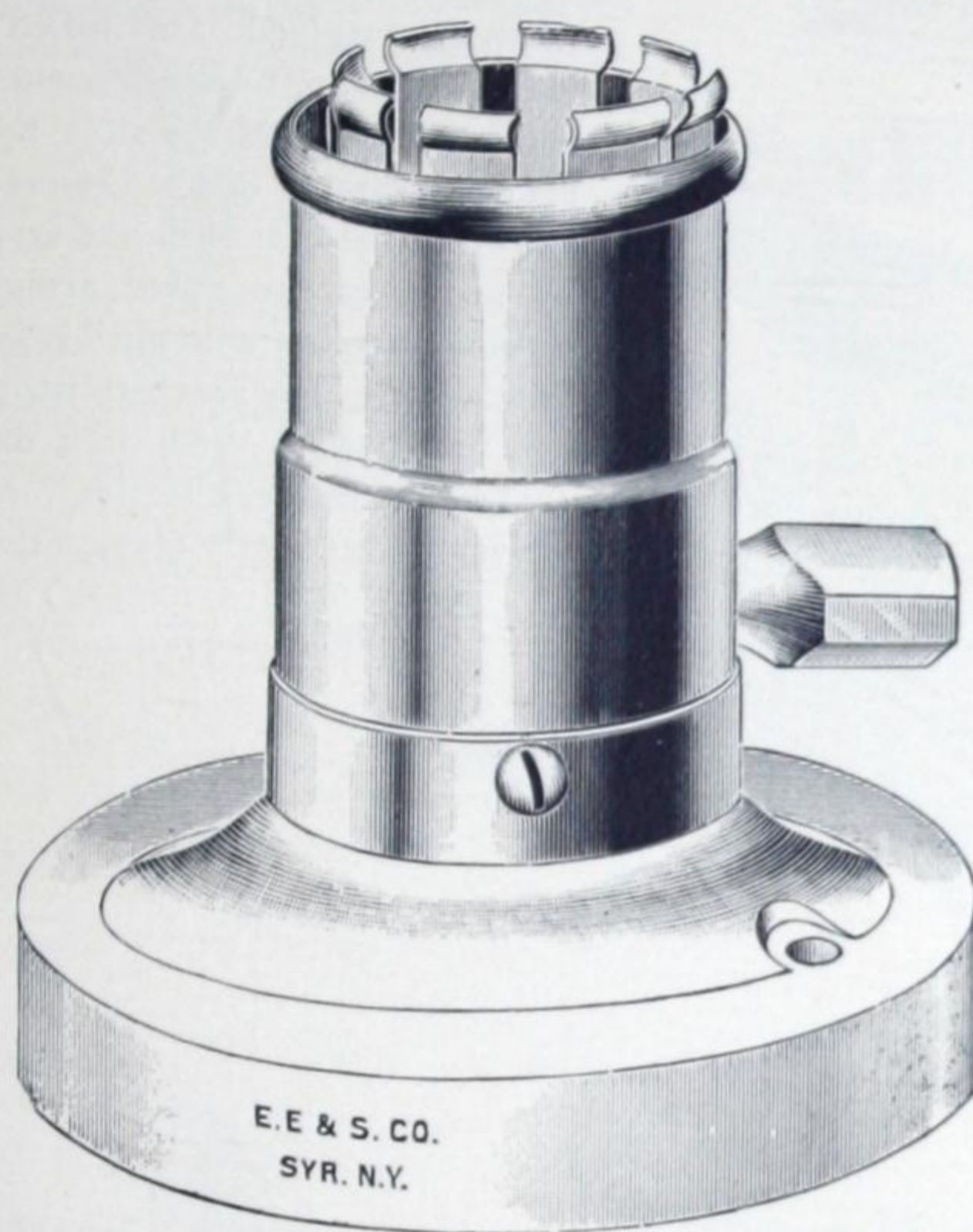
PRICE LIST.

Key Sockets.....	\$0.50
Keyless Sockets.....	0 40

Wall Sockets.

PATENTED DECEMBER 29, 1891.

For Westinghouse, Edison, and Thomson-Houston Systems.



Wall Sockets can often be used to save the expense of a bracket, and they are used to advantage in theaters and public halls for foot lights, and often around the edge of galleries. They are also adapted for street cars.

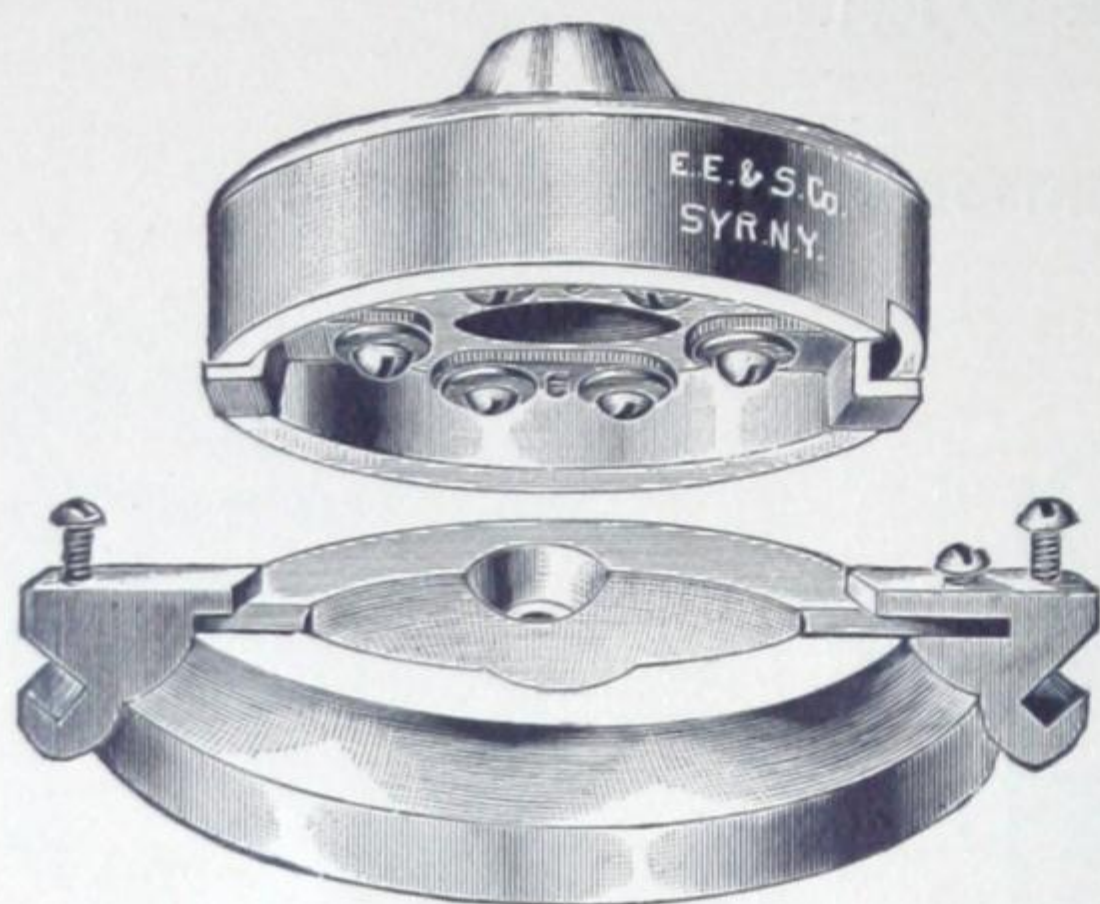
Many locations where they can be used to advantage suggest themselves in every variety of work. They are made with key so as to be controlled individually, or keyless and controlled by a switch at some convenient location. These are made for the Edison, Thomson-Houston and Westinghouse systems, with keys or without. The bases are slotted to facilitate wiring.

PRICE LIST.

Key Wall Sockets.....	\$0 60
Keyless Wall Sockets.....	0 50

Rosette Cut-Outs.

E. E. & S. ROSETTE.



This new Porcelain Rosette Cut-Out is most substantial in design and neat in finish. The porcelain base is particularly tough and will stand hard usage. The connection brasses in the base, to which the wires are fastened, are milled smooth, so that the ears in the cap, to the opposite end of which the fuse is connected, fit in the slots milled in the side connection brasses; one of the ears enters at the side as shown in the cut, with one screw, and the other ear, by swinging the cover around, is pressed into the slot on the other side until it is stopped by the porcelain, when it has reached its proper place. A one-

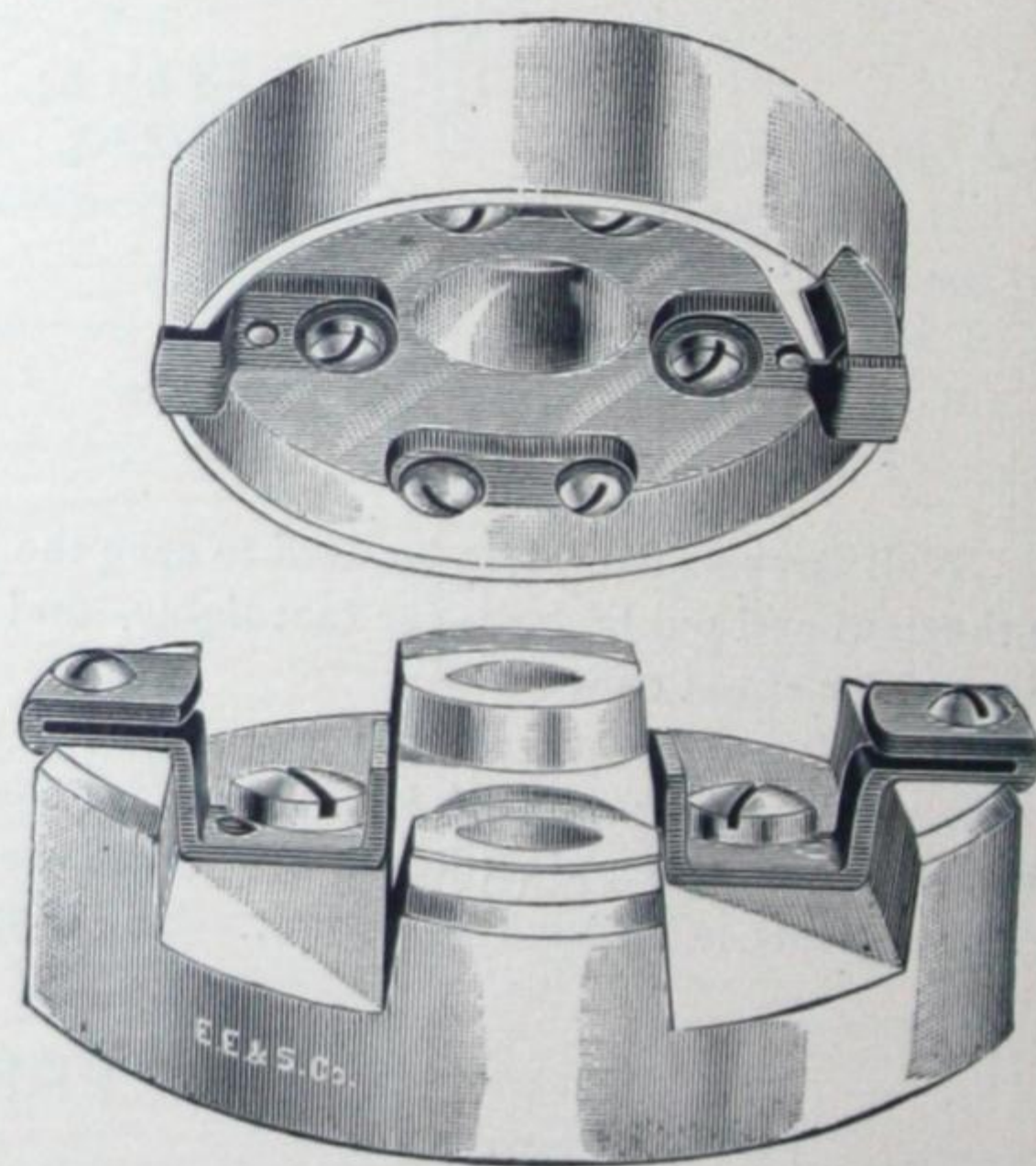
half turn of the screw then clamps the cover in position. With this design of cut-out, very rapid work can be done as it is only necessary to make the usual connections, after which the cap is put in place, when the one-half turn of the screw driver permanently clamps the cap in position.

Priceeach, \$0.35

COMBINATION ROSETTE.

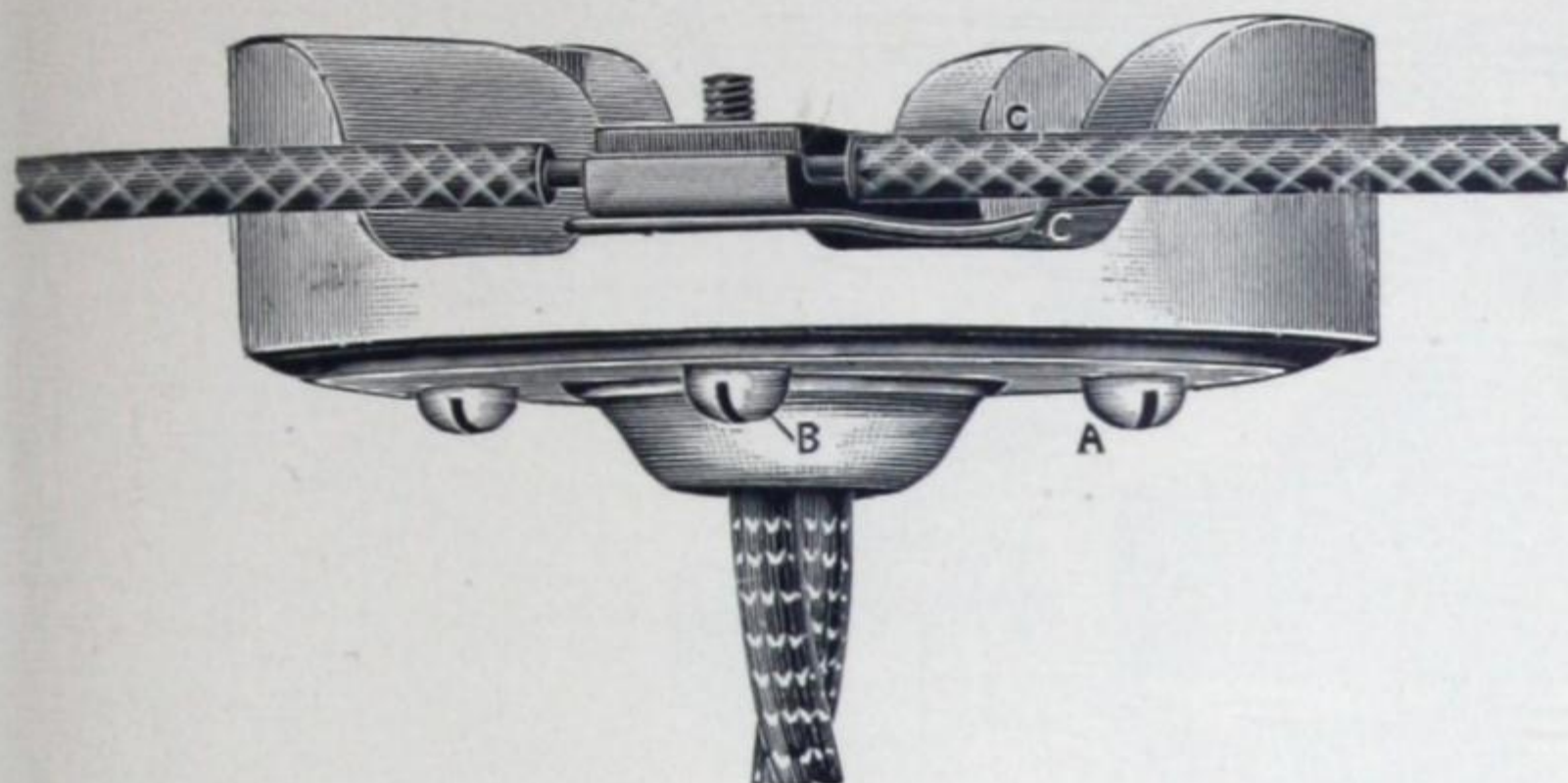
This Rosette, as will be seen from the cut, is adopted for both open and concealed work. Its durability and simplicity is unequalled. Especially adapted for moulding work.

PriceEach, \$0.40



PATENT APPLIED FOR.

Rosettes.

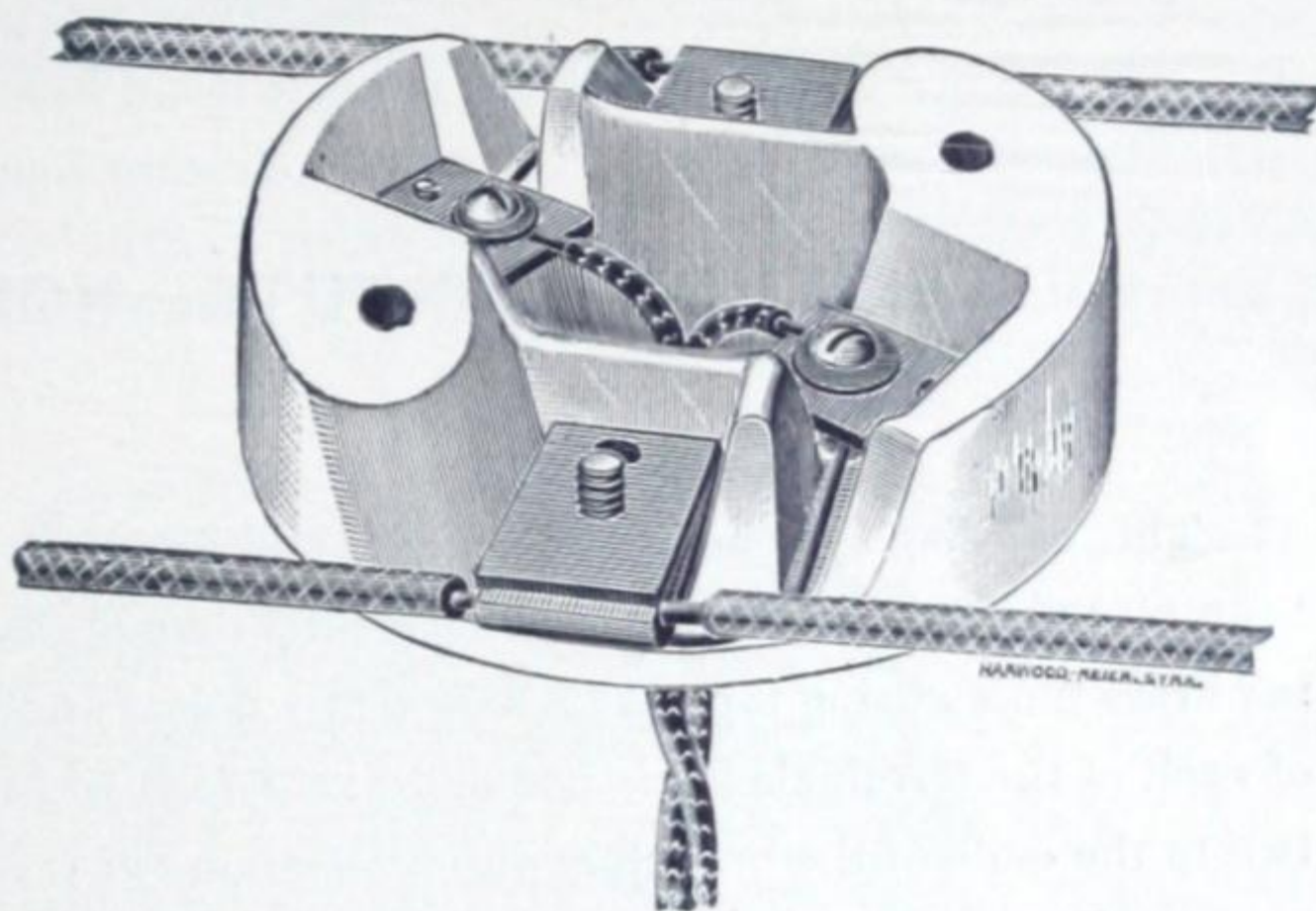


substantial in construction. Its low price, together with its many good qualities, assures for it a widespread adoption.

Price..... Each, \$0.25

No. 5 ROSETTE.

The latest Rosette on the market. Made of one piece of porcelain. A double cut-out it affords ample protection to the lamp. It can be fused when in place on the ceiling. Neat in appearance, simple in design,



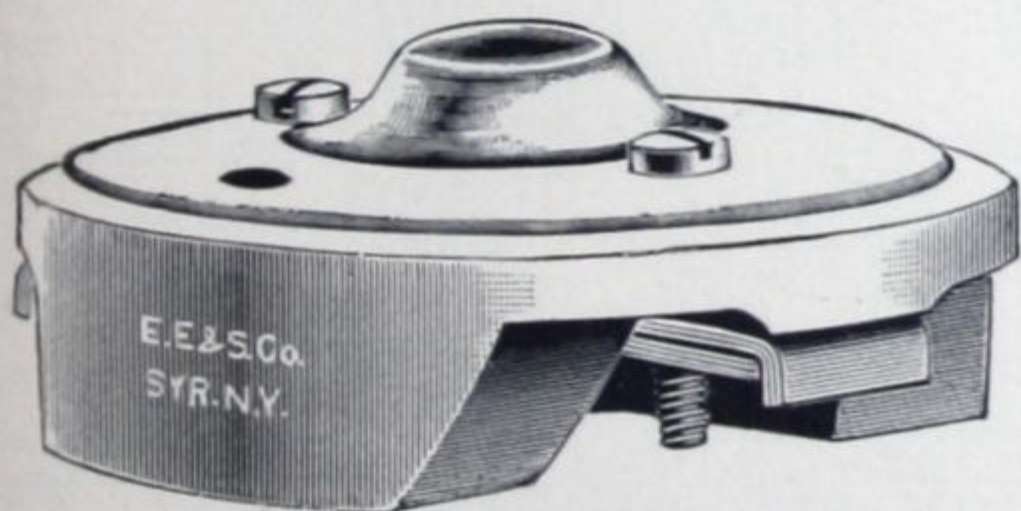
FUSELESS ROSETTE.

We are prepared to meet the demand for a Fuseless Rosette by the arrangement illustrated.

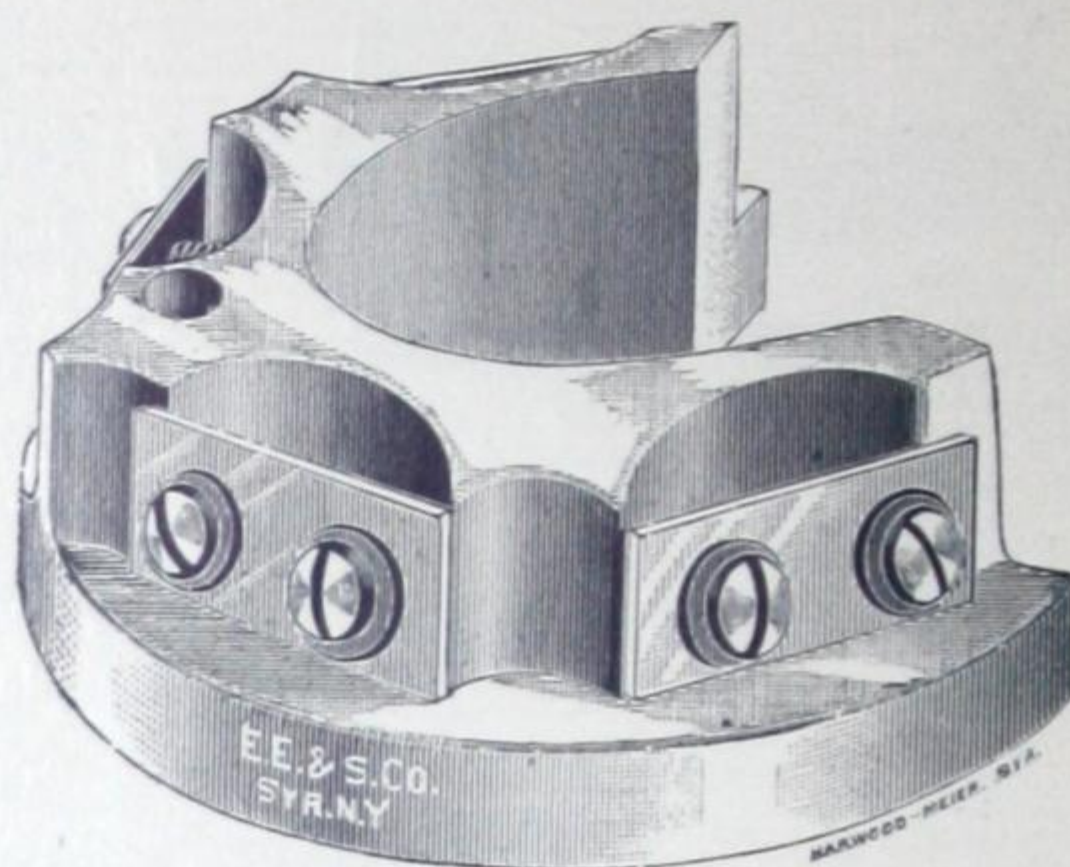
Two brass clamps are arranged so as to screw to the wires; the screws which tighten the clamp, passing through the porcelain part of the Rosette besides tightening the clamp on the branch wires; also screwing the ears to the Rosette. On the inner end of these brass ears is located a screw and washer, to which the terminals of the flexible cord are securely fastened. The cord then passes from the hole in the Rosette down to the lamp.

There is quite a demand for this style of Rosette in factories where lamps are dropped into locations among belts and manufacturing machinery where it would be difficult to place a fuse in the Rosette, and in such cases branches of six to eight lights each are protected by a small fuse block in a convenient location.

Price..... Each, \$0.20



Fixture Cut-Outs and Ceiling Buttons.



FIXTURE CUT-OUTS.—HORSE SHOE PATTERN.

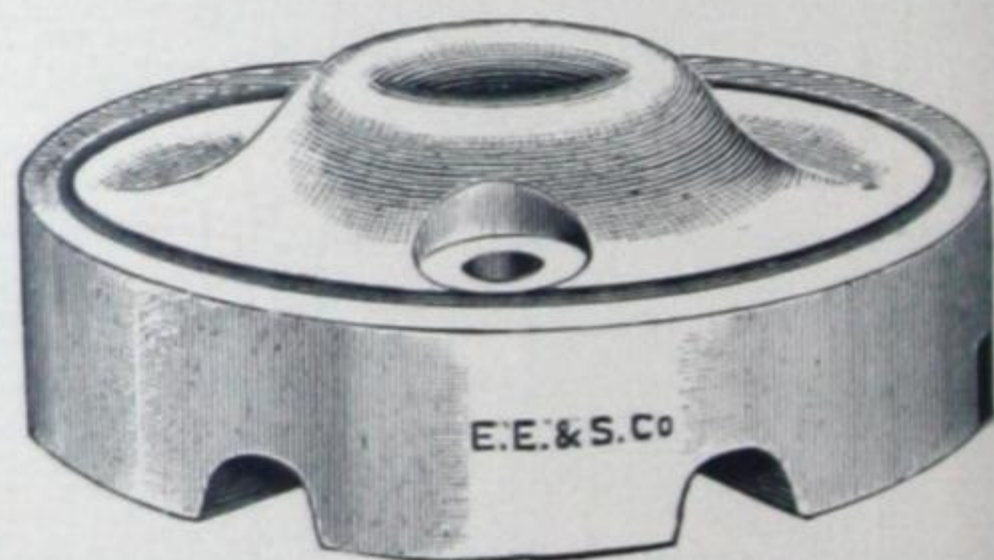
This cut displays one of the neatest, and by all means the most convenient Cut-out that has ever been placed on the market. The horseshoe shaped porcelain has mounted on it four brasses; each of the brass pieces being tapped for two screw holes, and the screws, with washers, inserted. One screw of each of the terminals holds one end of the fuse and the remaining screws in each plate are fastened, two to the ends of the branches which terminate at the end of the Fixture Cut-out, the other to the fixture wires.

Orders for these goods promptly filled from stock.

Price..... Each, \$0.30

CEILING BUTTONS.

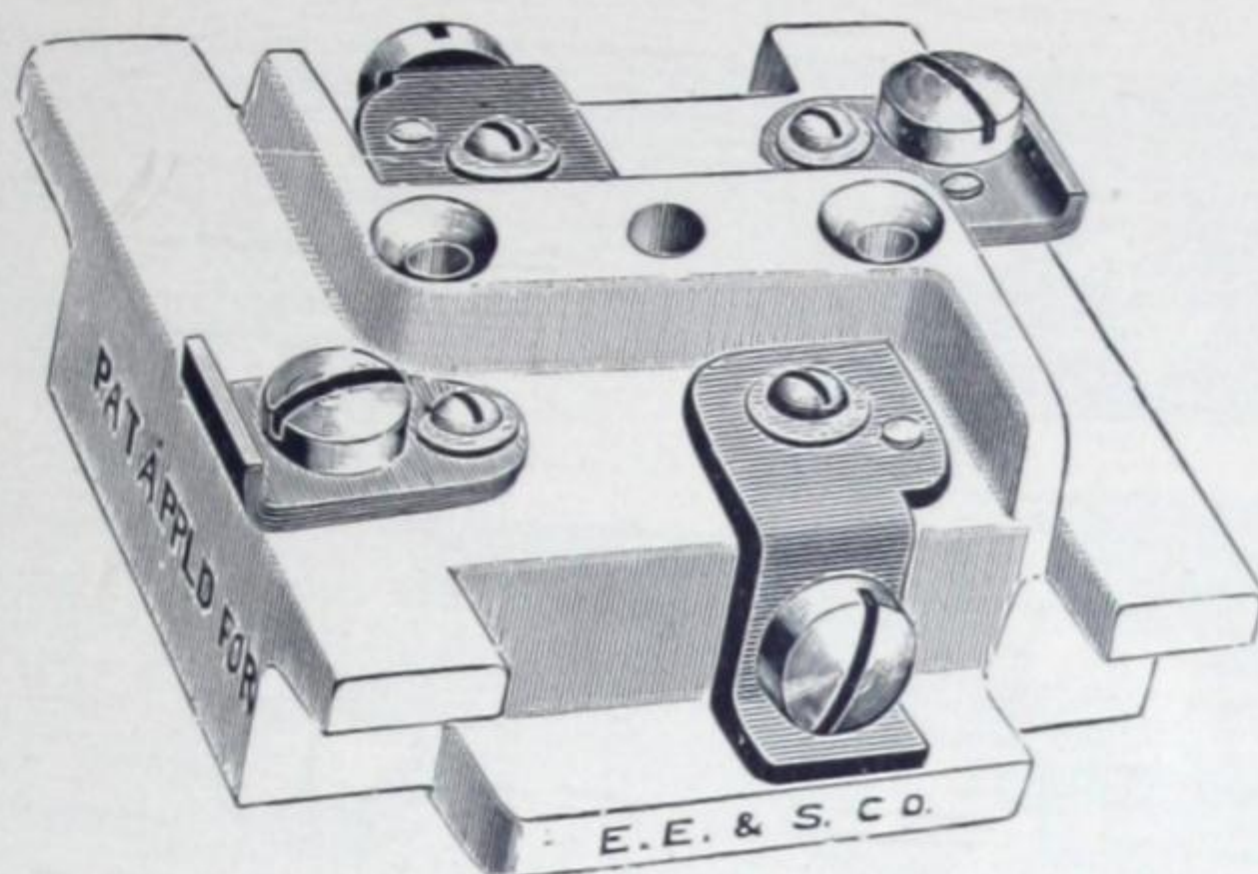
Of neat, finely finished porcelain. Slotted for wires. They can be put to various uses. Wood buttons can be furnished where desired.



PRICE LIST.

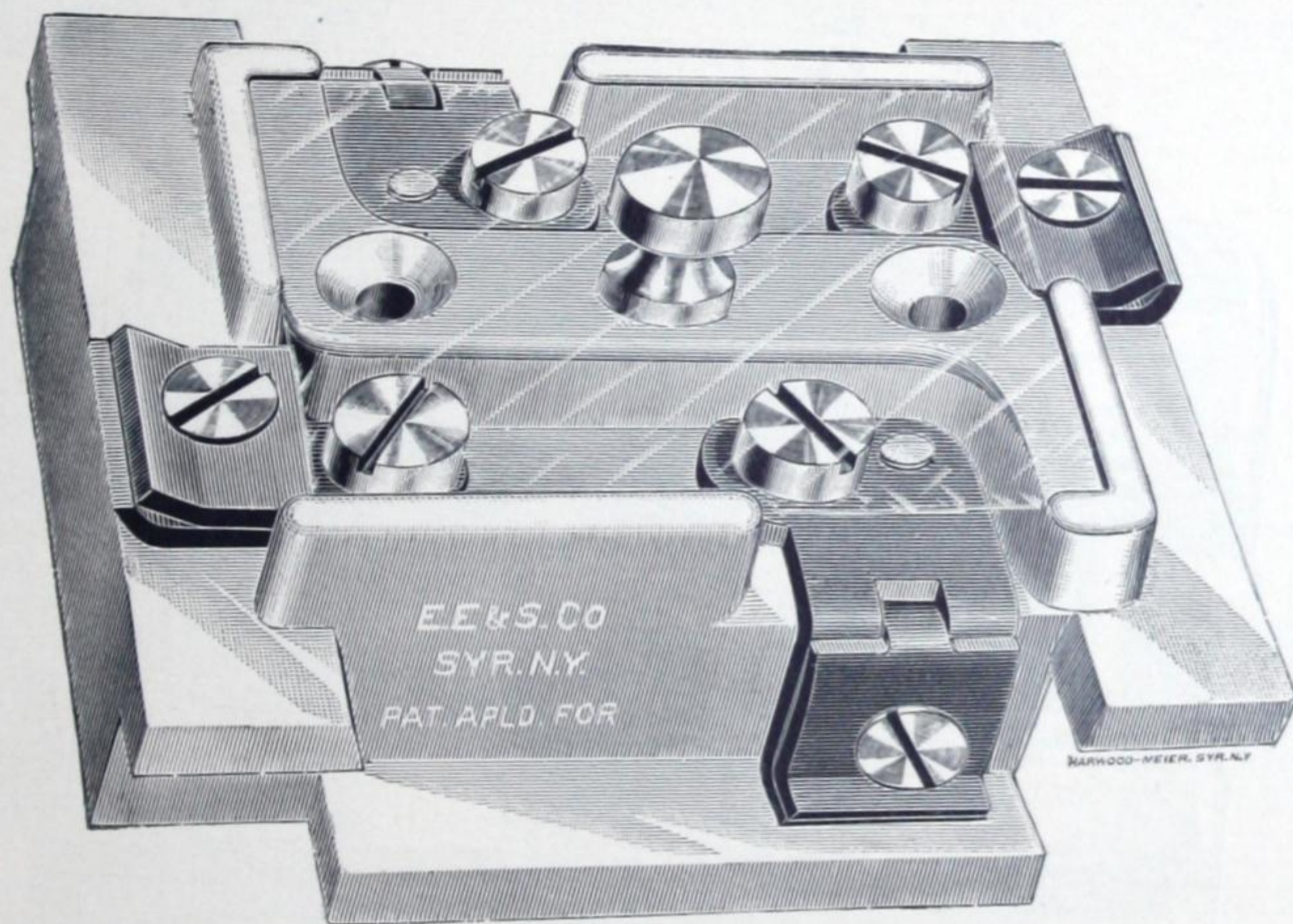
Porcelain Ceiling Button	\$0.07
Wood.....	.05

E. E. & S. Branch Cut-Out Blocks.



E. E. & S. 10 AMP. BRANCH BLOCK.

The wires are well protected and insulated from the ceiling. The main wire-ways will take large sizes of wire. Unexcelled for finish and durability. Contacts for the main wires thoroughly protected from drippings or accumulations of dirt and moisture. The Branch wires separated from the main wires by porcelain projections as shown.

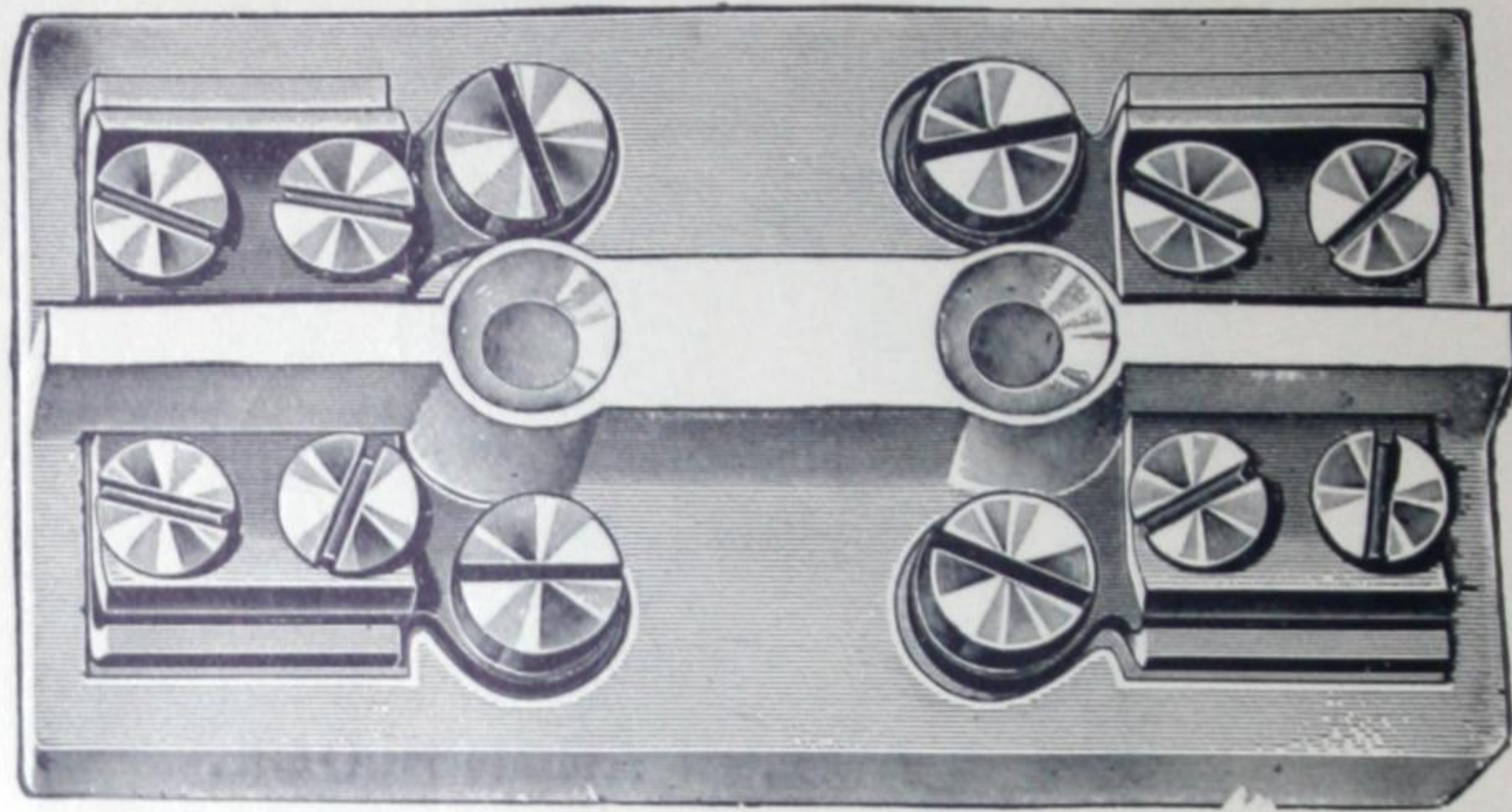


E. E. & S. 25 AMP. BRANCH BLOCK.

A durable, practical, well finished Block. Mica covered, it is protected from flying and combustible material. The mica is held in place by a friction post which holds it firmly, but at the same time can be withdrawn by the fingers, dispensing with the use of a screw driver. The porcelain withstands the hardest usage.

Price, 10 Ampere	Each, \$0.35
" 25 "	" .50
" 25 " Mica cover	" .60

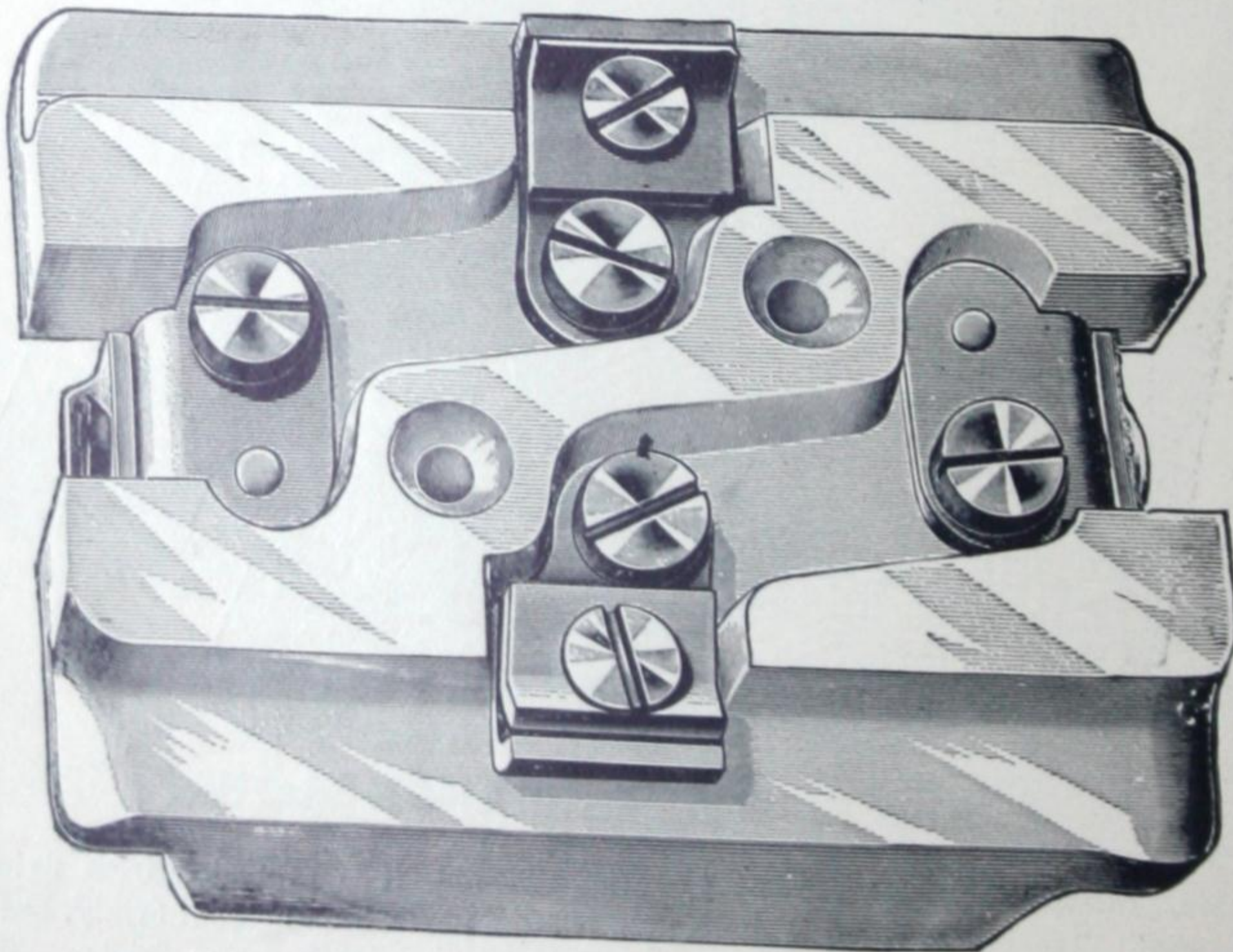
Porcelain Cut-Outs.



No. 1508.

Main Cut-Out.

Size.	Length.	Width.	Price.
10 Ampere	$3\frac{1}{4}$	$1\frac{5}{8}$	\$0.45
25 "	$3\frac{7}{8}$	2	.60
50 "	5	$2\frac{1}{2}$	.85
100 "	$5\frac{3}{4}$	$4\frac{1}{4}$	1.35

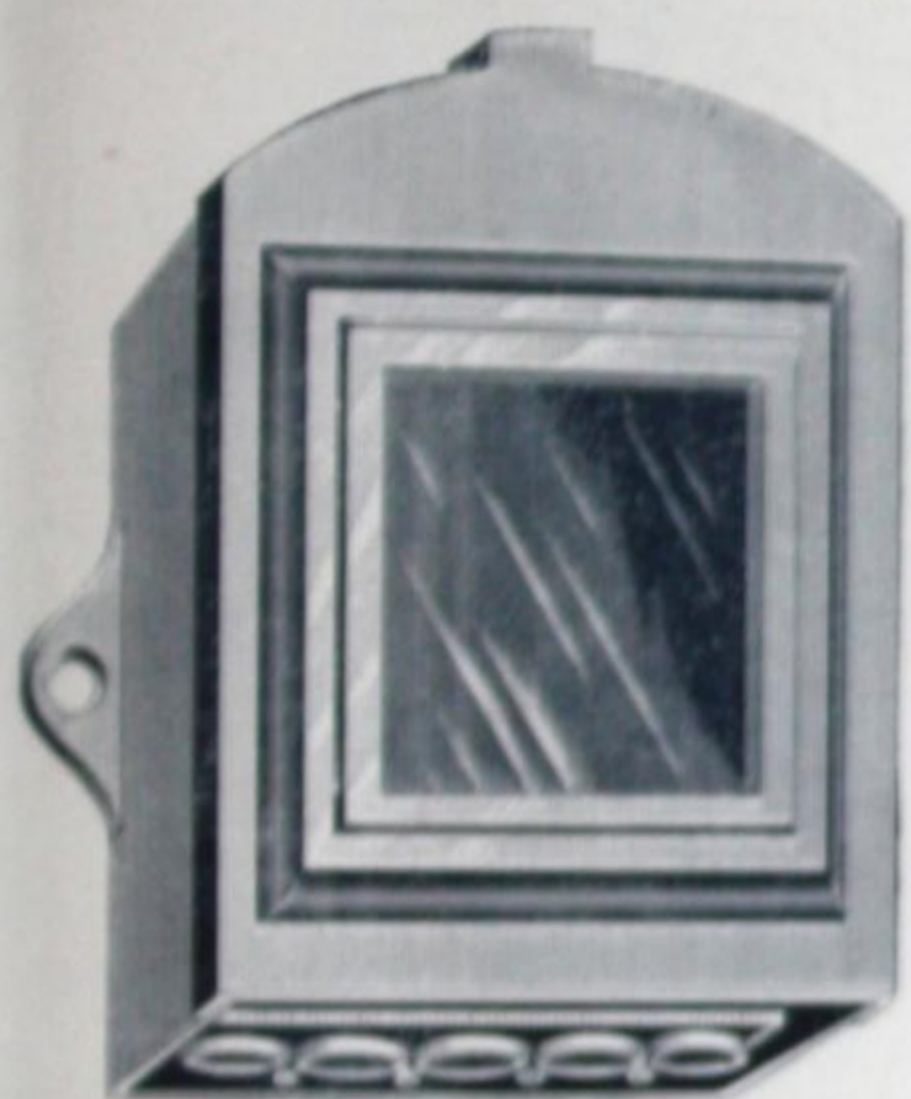


No. 1509.

Branch Cut-Out.

Size.	Length.	Width.	Price.
10 Ampere.	2	2	\$0.45
25 "	4	3	.60
50 "	$4\frac{3}{4}$	$4\frac{1}{2}$	1.00

Feeder and Junction Boxes.



No. 1268.

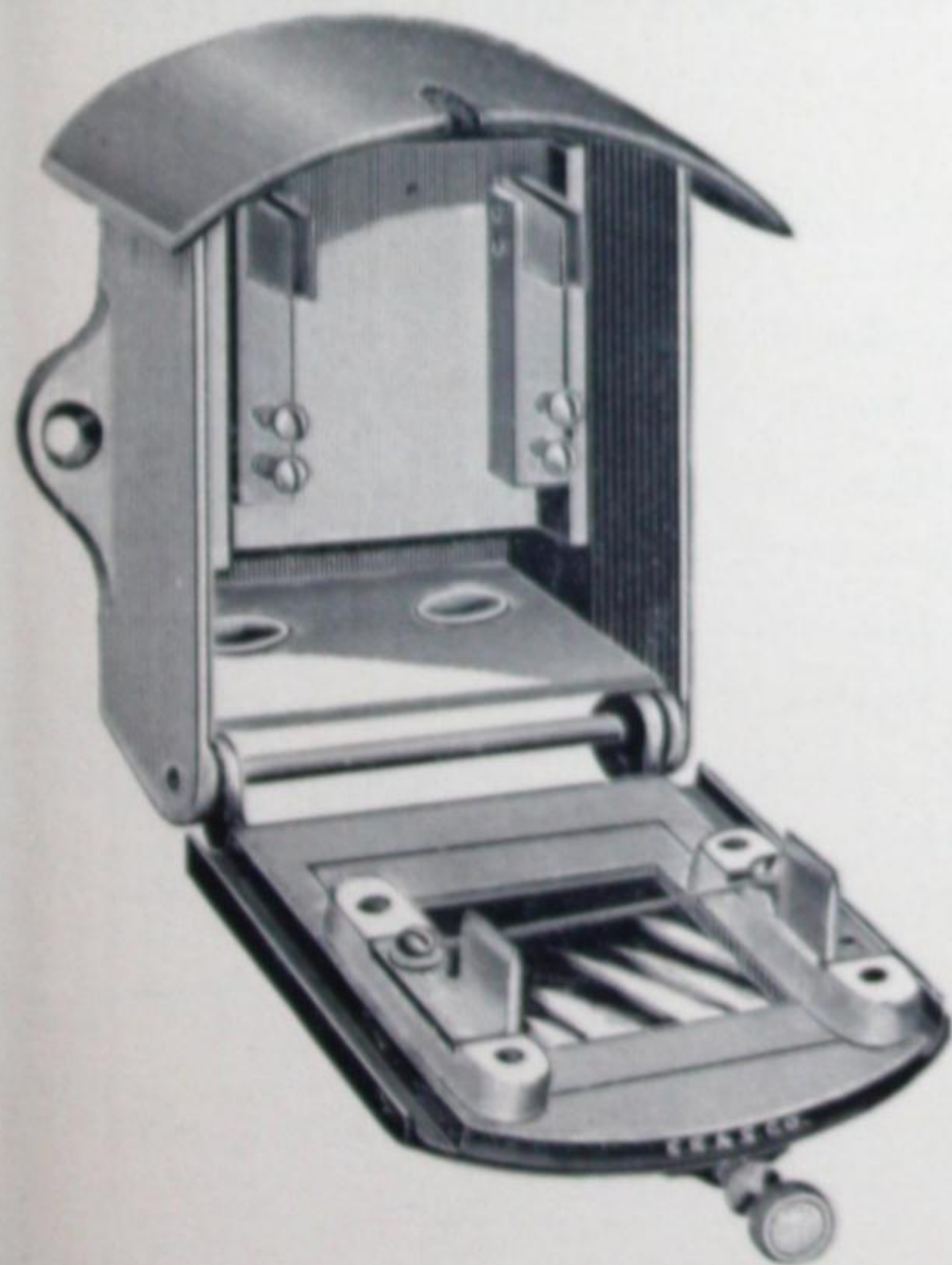
Feeder Box.

Placed at the Junction of Feeder and Mains.

IT IS EQUIPPED WITH SAFETY FUSES, WHICH CAN BE
EASILY REPLACED WHEN NECESSARY.

It is a Neat and Convenient Form of Box.

Price\$10.00



IMPROVED E. E. & S. CO.'S

Junction Box.

Placed between the Feeder Boxes and
Transformers.

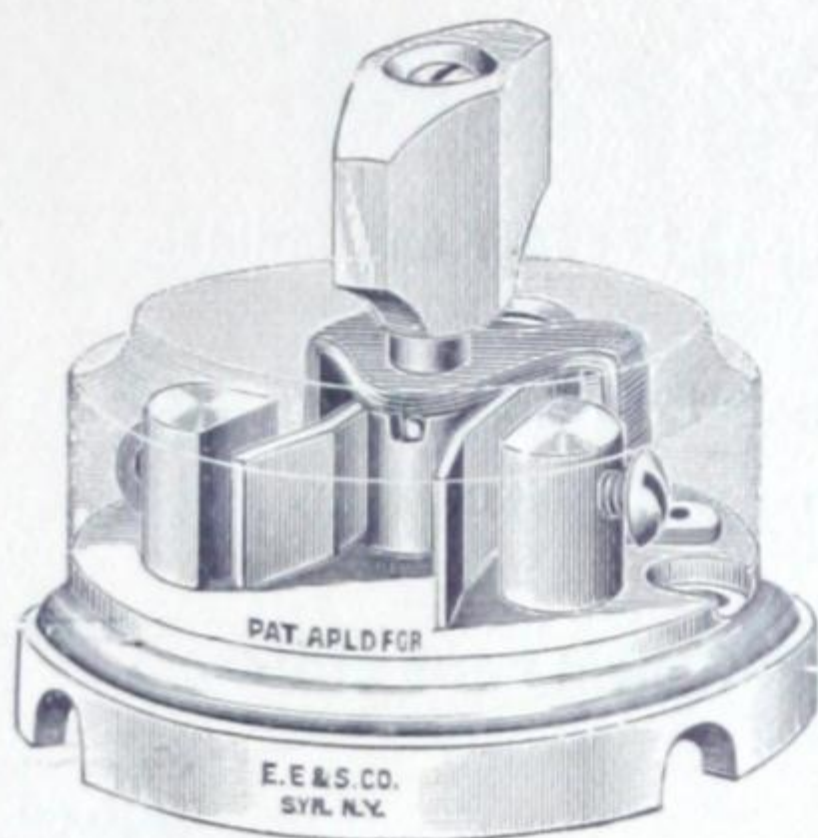
BY MEANS OF SAFETY FUSES IT DIRECTLY PRO-
TECTS THE LAMPS FROM EXCESS
OF CURRENT.

Price\$13.00

Incandescent Switches.

E. E. & S. 5 AMPERE SWITCH.

SINGLE POLE.

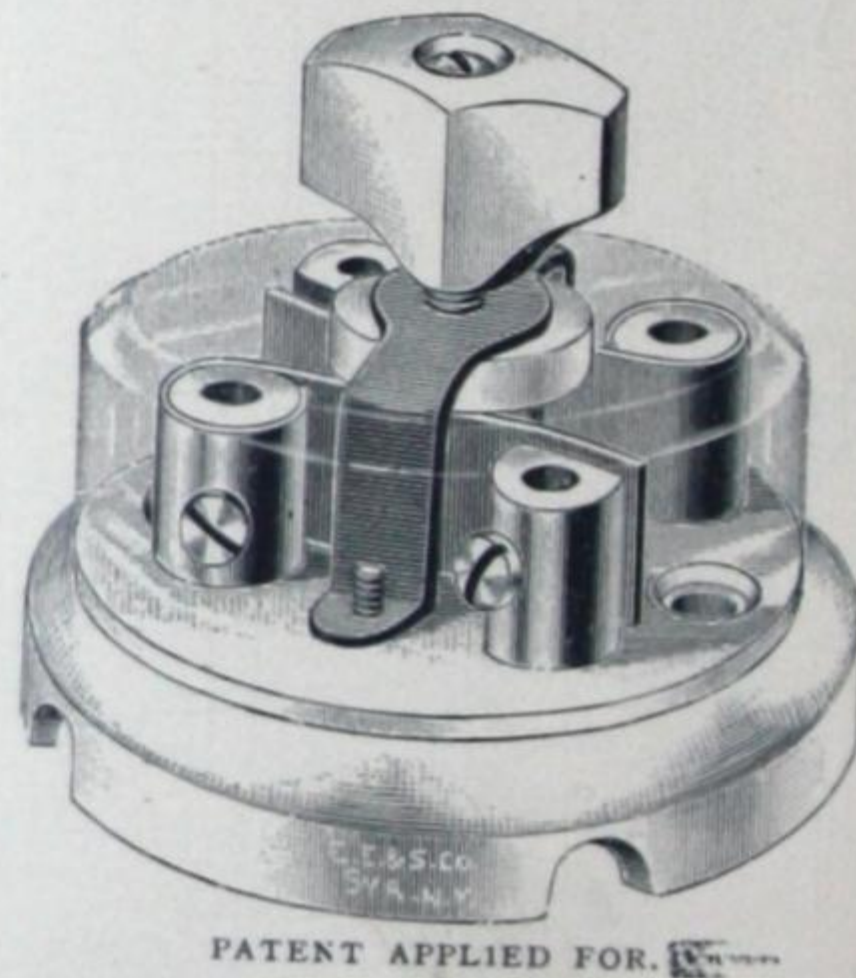


Here is represented one of the most satisfactory little switches ever presented. It has ample contacts for double its rated capacity and makes a very sudden double "break" which is practically sparkless, so that in continuous use the contacts show no deterioration. The switch is mounted on porcelain base with a porcelain key. Where desired we can furnish a hard rubber key.

Price Each, \$0.60

E. E. & S. DOUBLE POLE SWITCHES FOR 5 AND 10 AMPERES.

This illustrates our double pole switch, it is made in two sizes for 5 and 10 Amperes respectively. Its carrying capacity is much underrated, as the factor of safety is given a large predominance. It is compact, durable, simple. Furnished with a porcelain base and key and nickel-plated cover. Hard rubber key if desired. Gold, silver, copper, or other finishes to cover on special orders at a slight advance in price over ordinary finish.

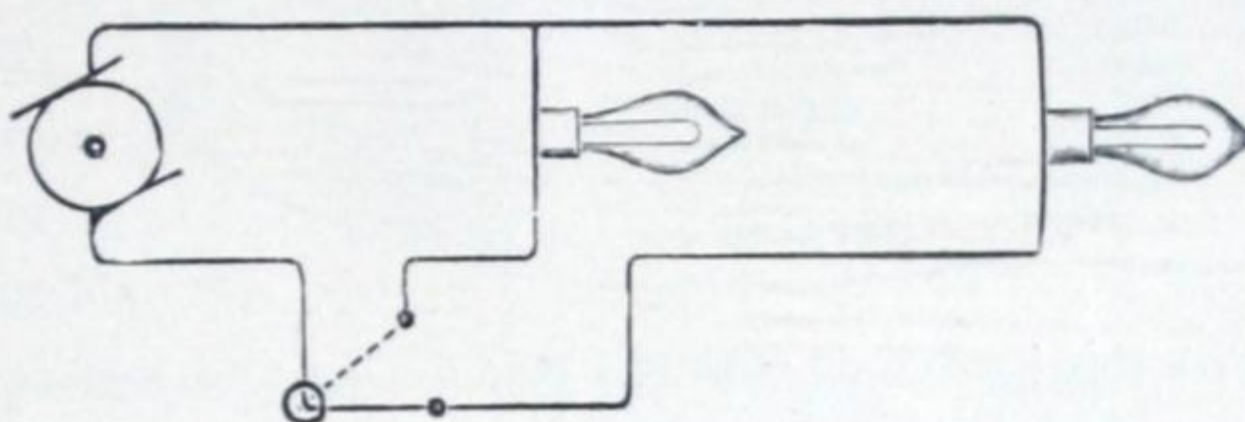
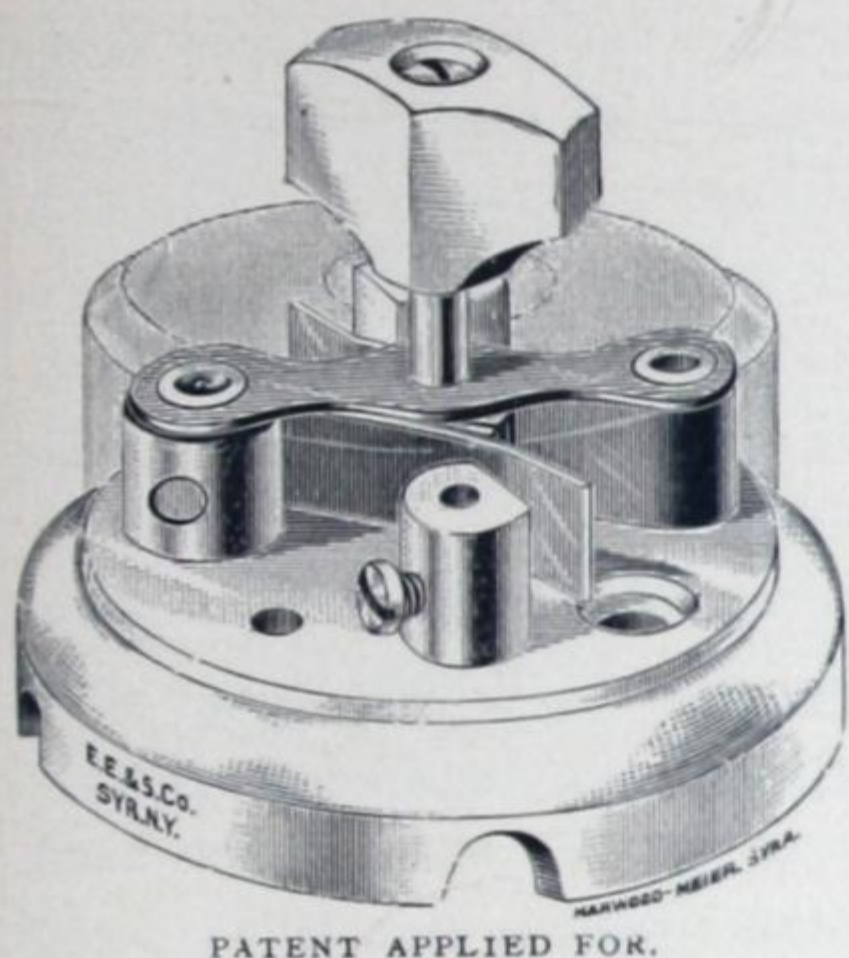


Price, 5 Amperes \$1.00
 " 10 " 1.20

Three-Way and Keyless Switches.

E. E. & S. 3-WAY SWITCH.

In many locations where lights are leased by contract, a customer often desires to use a light in place of some other light with the use of which he can dispense for the time being, and thus enable him to practically use an



additional lamp without extra charge. This is permitted by using the switch here shown. By means of this either of the two lights shown in the diagram can be lighted or extinguished, but both can never be lighted at the same time. The switch is similar in style to the others shown and is of the same compact, simple type.

Price, 10 Amperes..... Each, \$1.00

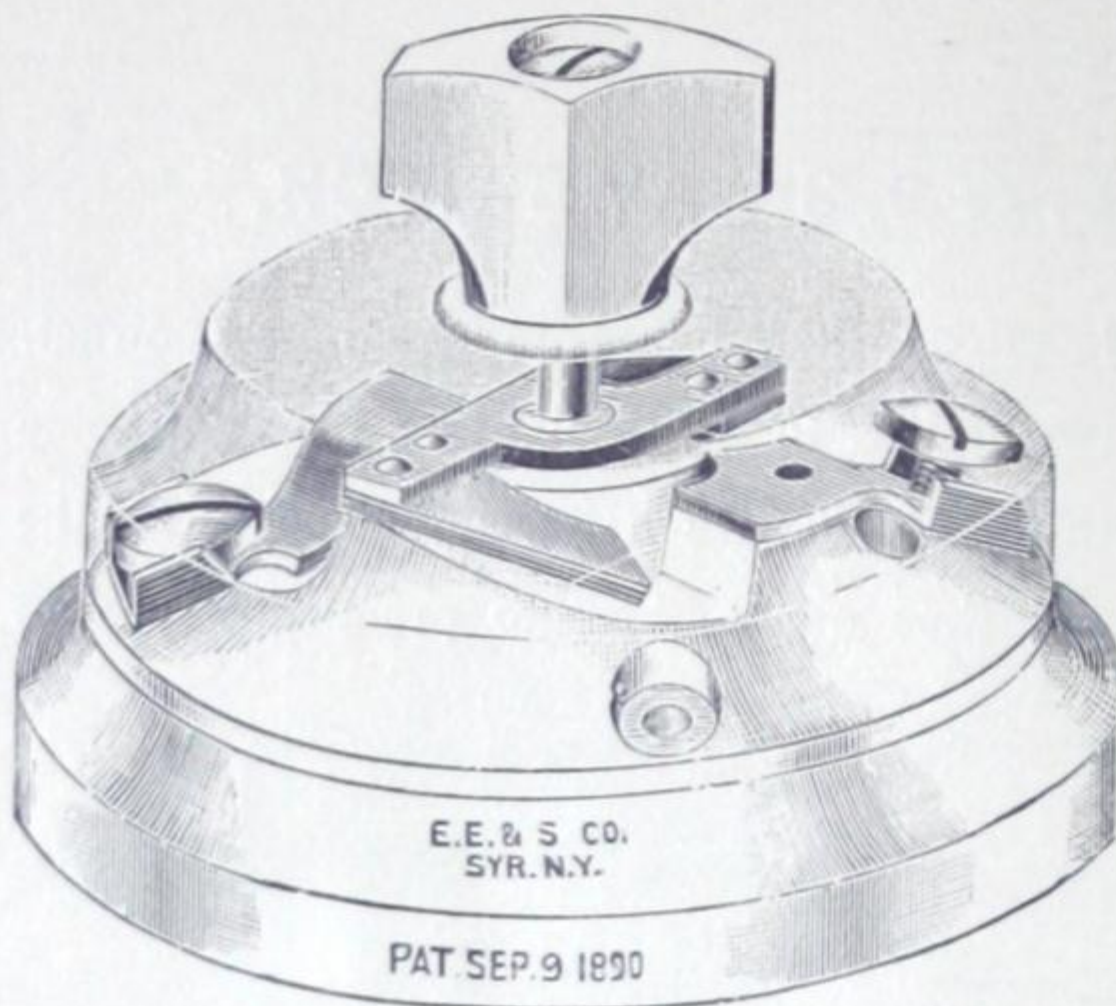
E. E. & S. CHINA COVERED KEYLESS SWITCH.

The metal cover and the key of the ordinary switch, is replaced by a porcelain combination key and cover. The switch turns in one direction to light or extinguish the lamps it controls. Reversing the direction of rotation of the cover, unscrews it from the switch so that the connections can be made the same as in the ordinary switch. This cover is made of the finest China ware and the edges are neatly fluted to facilitate turning it. When desired it can be decorated to correspond with the finish of the room in which it is to be placed.



Price, 5 Amperes..... Each, \$1.25

Incandescent Switches.



E. E. & S. CROWELL SWITCH.

This cut represents what we call our Crowell Switch, it has been frequently used for 20 Amperes without sparking or heating of the parts, but as in most cases the Underwriters object to the use of single pole switches with currents of that amount, we have accordingly given it a low designation as to capacity.

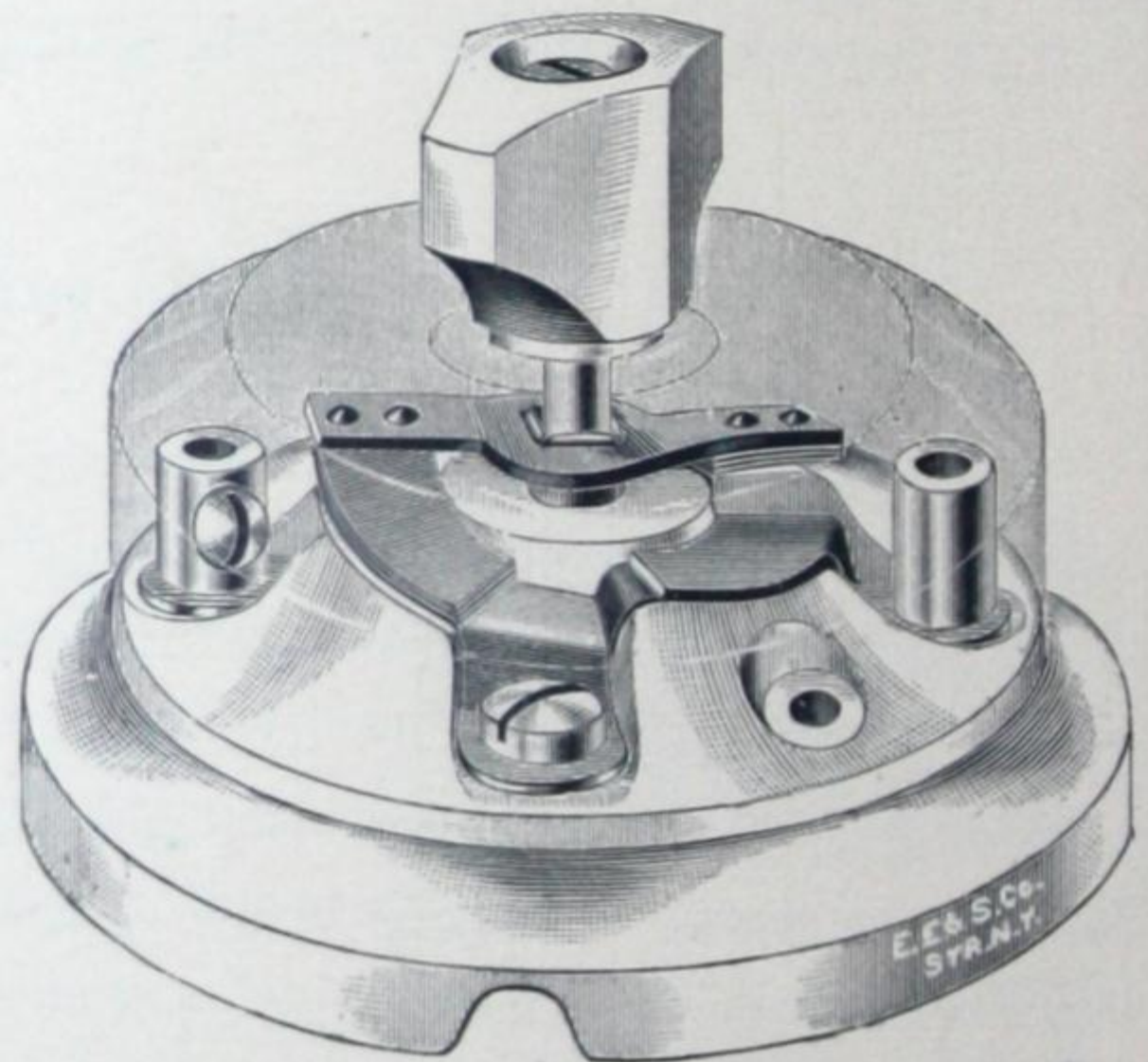
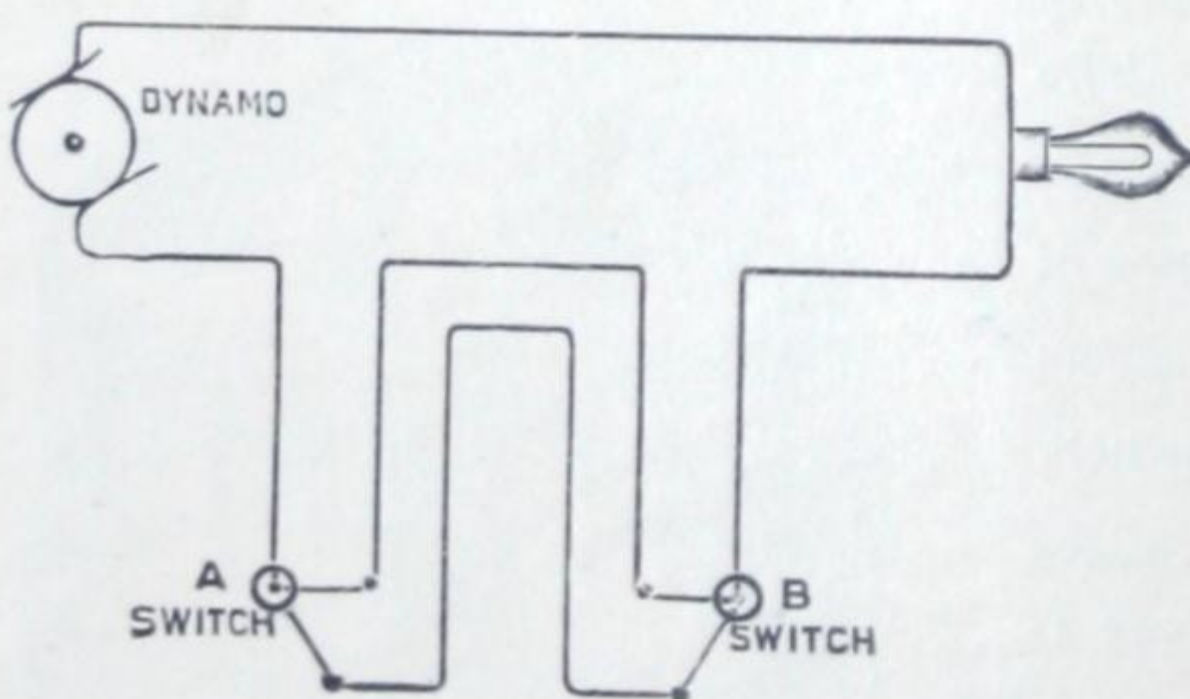
This switch has given universal satisfaction and its users are lavish in its praises. It has a quick make, a long wiping contact, and a very sudden "break" actuated by a spring out of control of the hand.

With this Switch as with our Key Sockets, we use a porcelain key unless otherwise especially ordered, as on Switches as well as on Key Sockets where hard rubber keys have been used, trouble has been found with their softening under high temperature and either twisting off or melting out of shape.

Price, 10 Amperes Each, \$0.75
 1585

E. E. & S. LAZYMANS SWITCH.

For greater convenience, particularly in residences, as well as in halls and stairways, it is well to be able to light or extinguish a lamp from two points. This is accomplished by our "Lazyman's Switch"



as shown in the cut. A diagram of the circuit is also given. At either of the points A or B the light or cluster of lights controlled by the switch can be turned on or off regardless of the position of the other switch. Doubtless there will occur to the reader many locations where these switches can be used to advantage.

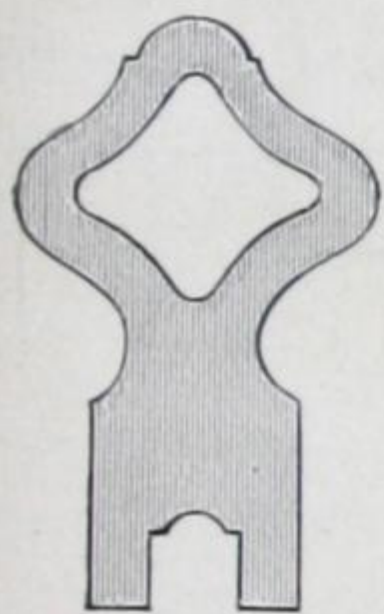
Price Each, \$1.00

Lock and Flush Switches.



E. E. & S. LOCK SWITCH.

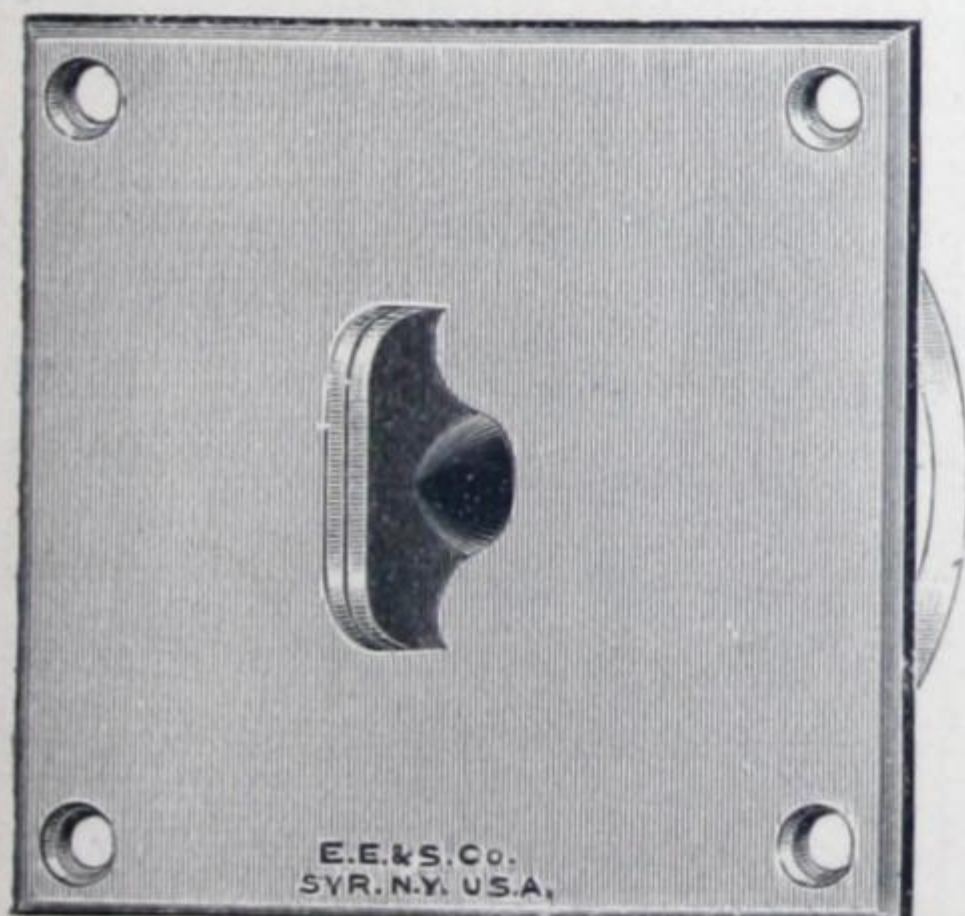
In this switch the current can be turned on or off by inserting the key in its receptacle, and turning either way as with the ordinary handle. Upon withdrawing the key, it is impossible for anyone to meddle with the lights controlled by the switch.



Just the thing where it is necessary to place a switch within the reach of children. These switches are especially adapted for use in insane asylums, etc. All that is visible is a neat, highly polished brass plate, flush with the wall, the body of the switch being concealed.



Price, 5 Amperes			
10	Single Pole	Each	\$2.00
5			2.50
10	Double Pole		3.00
			3.50

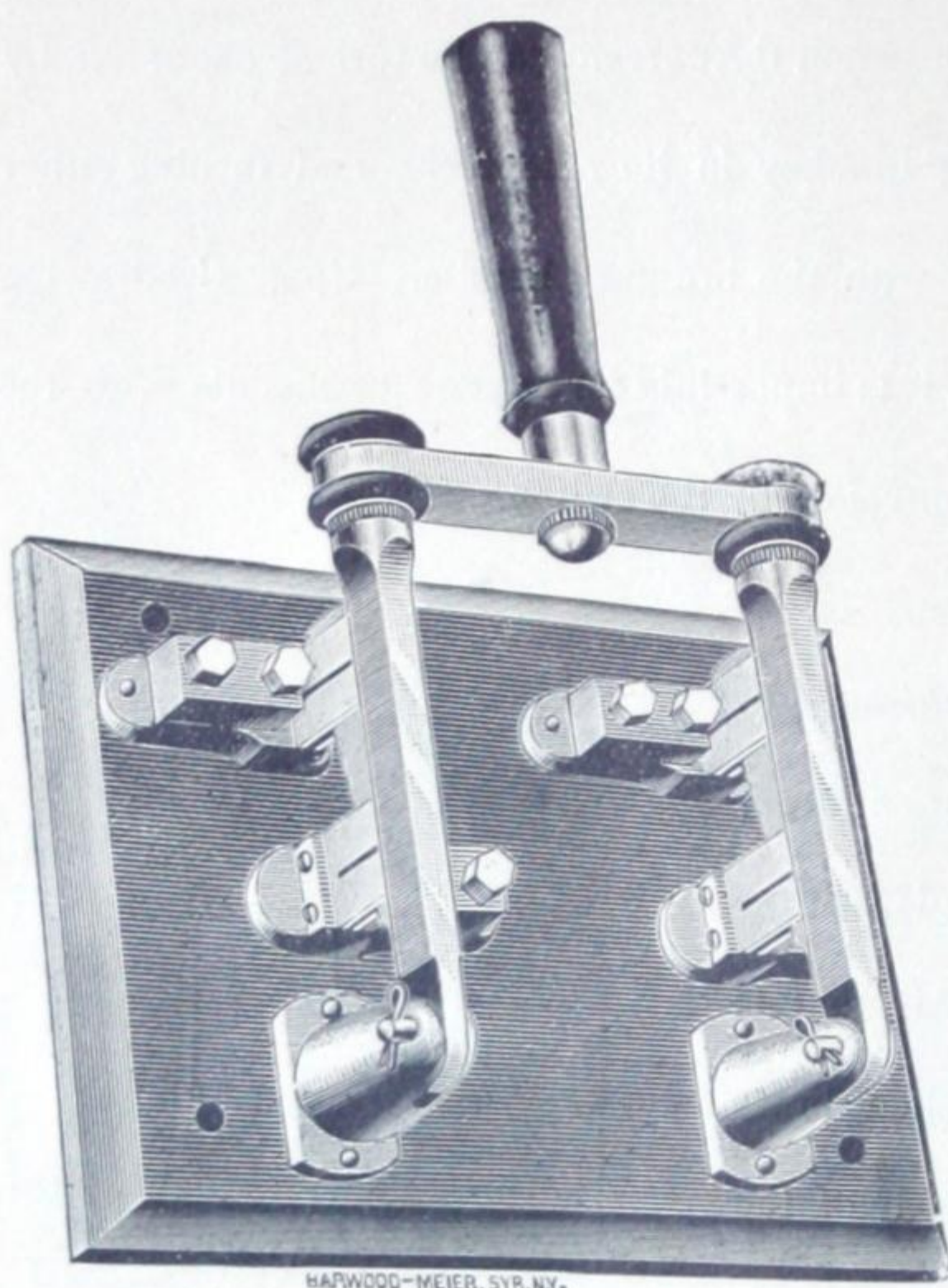


E. E. & S. FLUSH SWITCH.

Designed for special interior or house work, where the usual switch projecting out from the wall would be objectionable. Flush with the wall. Only the Porcelain or Hard Rubber Key projecting from the polished brass plate, it presents a sightly appearance, and will meet with much favor where used.

Price, 5 Amperes, Single Pole		Each	\$1.25
10			1.50
5	Double Pole		1.75
10			2.00

Single Throw Station and Motor Switches.

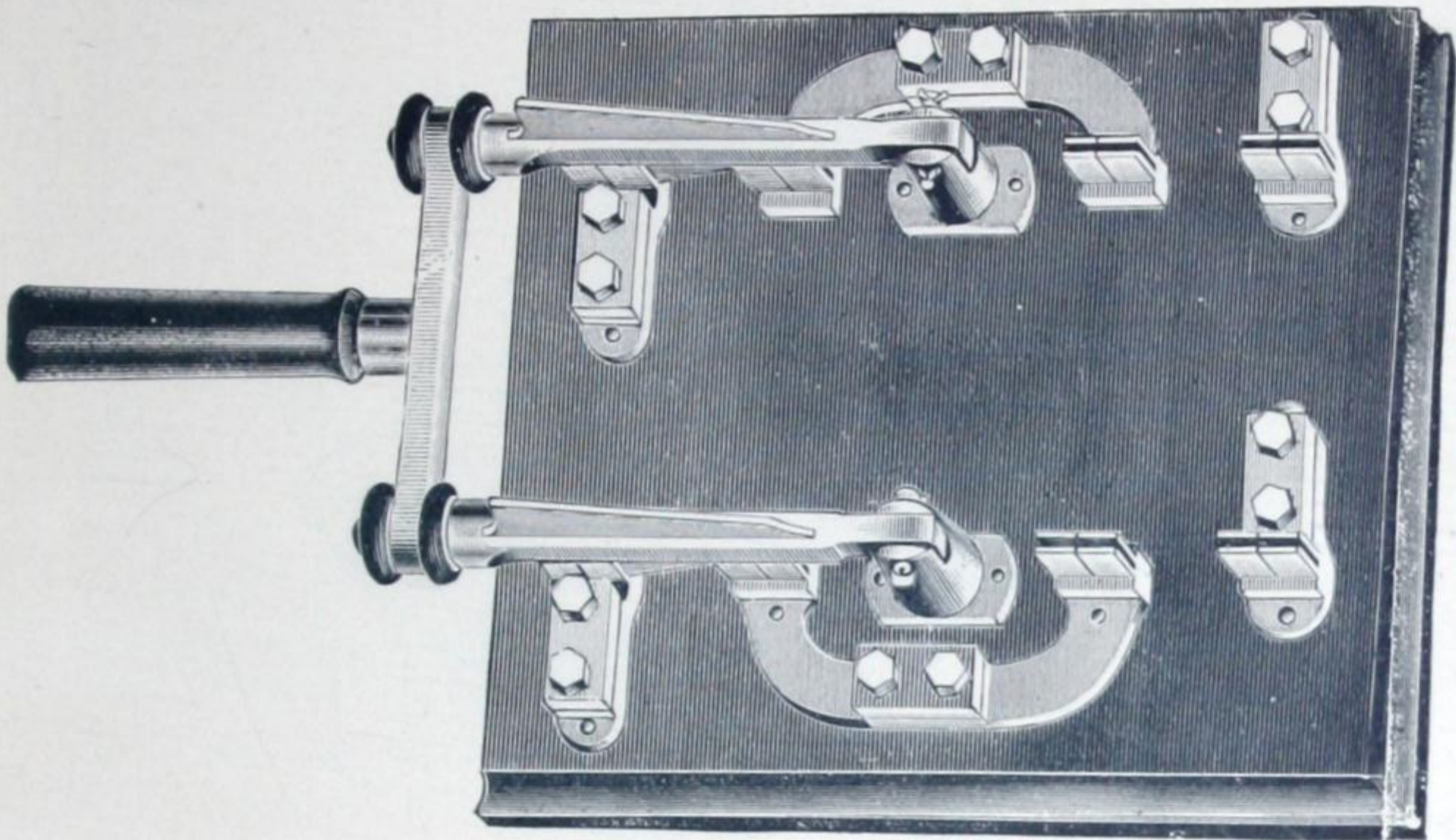


We manufacture a complete line of switches of this type. Single, Double and Triple Pole. The switches are fitted with the most approved parts, standards, terminals, etc., and are mounted on marbleized slate bases with plain black or fancy finishes. Made for either 1,000 volts alternating current and 300 volts direct, or for 600 volts direct current.

PRICE LIST.

	SINGLE POLE.		DOUBLE POLE.		TRIPLE POLE.	
	300 Volts. (1000 V. Alt.)	600 Volts.	300 Volts (1000 V. Alt.)	600 Volts.	300 Volts. (1000 V. Alt.)	600 Volts.
35 Amperes.....	6 00	6 00	10 00	10 00	20 00	20 00
75 ".....	10 00	10 00	20 00	20 00	40 00	40 00
150 ".....	15 00	15 00	30 00	30 00	50 00	50 00
300 ".....	25 00	25 00	45 00	45 00	60 00	60 00
600 ".....	35 00	35 00	70 00	70 00	90 00	90 00
1000 ".....	65 00	65 00	100 00	100 00	130 00	130 00

Double Throw Station and Motor Switches.



Made in Single and Double Pole, of the most approved pattern. Bases of marbleized slate finished in plain black, or fancy colors. All the brass and copper parts finely polished and lacquered. Full carrying capacities and easily wired.

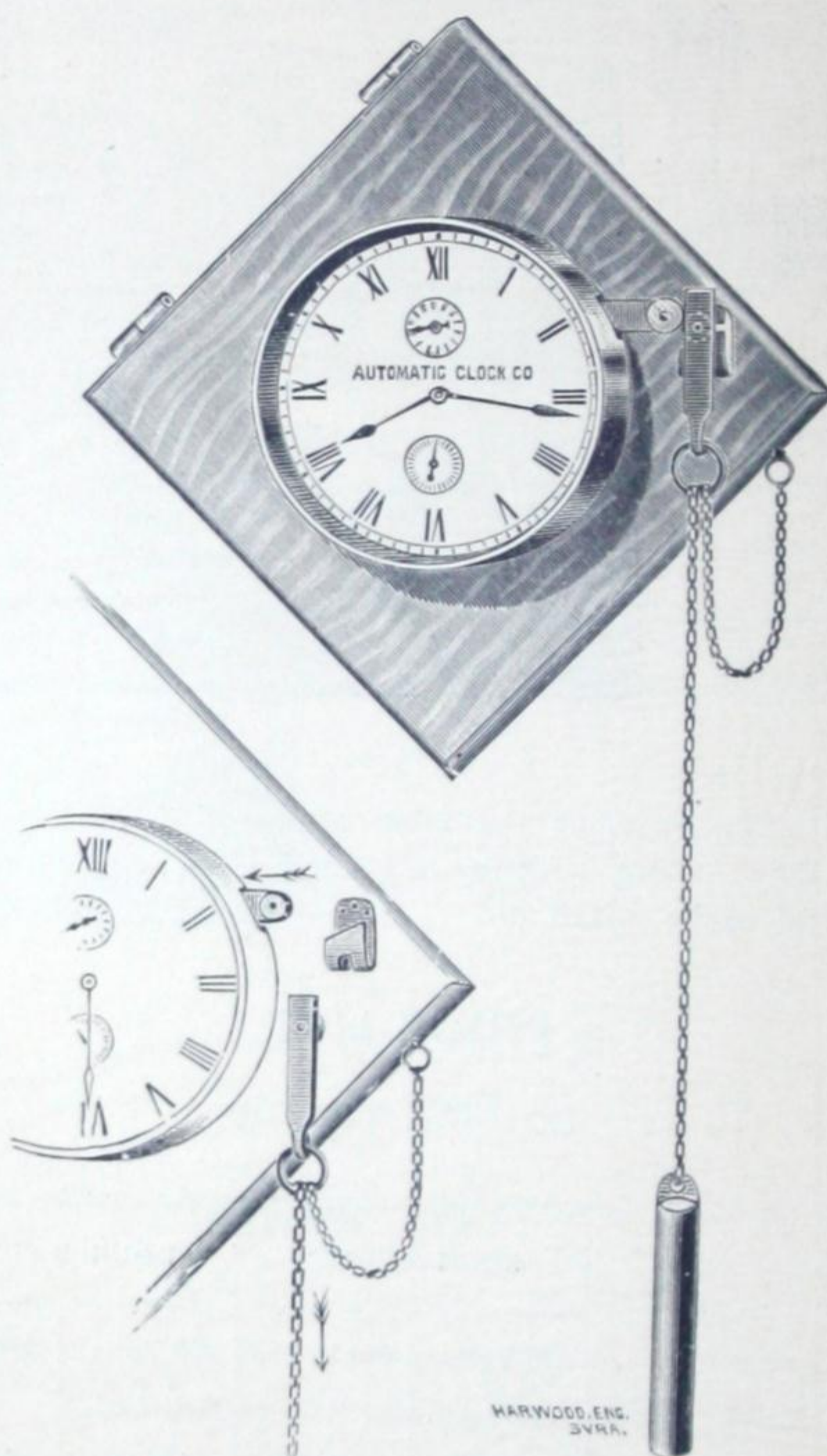
PRICE LIST.

DOUBLE THROW.

	SINGLE POLE.		DOUBLE POLE.		TRIPLE POLE.	
	300 Volts. (1000 V.Alt.)	600 Volts.	300 Volts. (1000 V.Alt.)	600 Volts.	300 Volts. (1000 V.Alt.)	600 Volts.
35 Amperes.....	8 00	8 00	15 00	15 00	25 00	25 00
75 ".....	15 00	15 00	25 00	25 00	50 00	50 00
150 ".....	25 00	25 00	40 00	40 00	60 00	60 00
300 ".....	40 00	40 00	60 00	60 00	75 00	75 00
600 ".....	60 00	60 00	100 00	100 00	120 00	120 00
1000 ".....	100 00	100 00	150 00	150 00	150 00	150 00

Automatic Clock for Cut-Out.

CLOSED FOR ARC LIGHTS.



Connect chain with weight to handle of the switch. When the traveler drops from clock the drop of the weight will turn off the switch.

The clock can be utilized to cut out a loop at any hour on an all night line.

With each clock is packed 36 feet link brass chain, extra heavy nickel plated; 1 japanned pulley; 5 galvanized pulleys with brass screw-eyes; 2 nickel plated hooks and rings; 12 large and 12 small snaps, for fastening chain; 1 weight, nickel plated, and all necessary screws.

Clock Complete,----- Price, \$15.00

Automatic Clock Cut-Out.

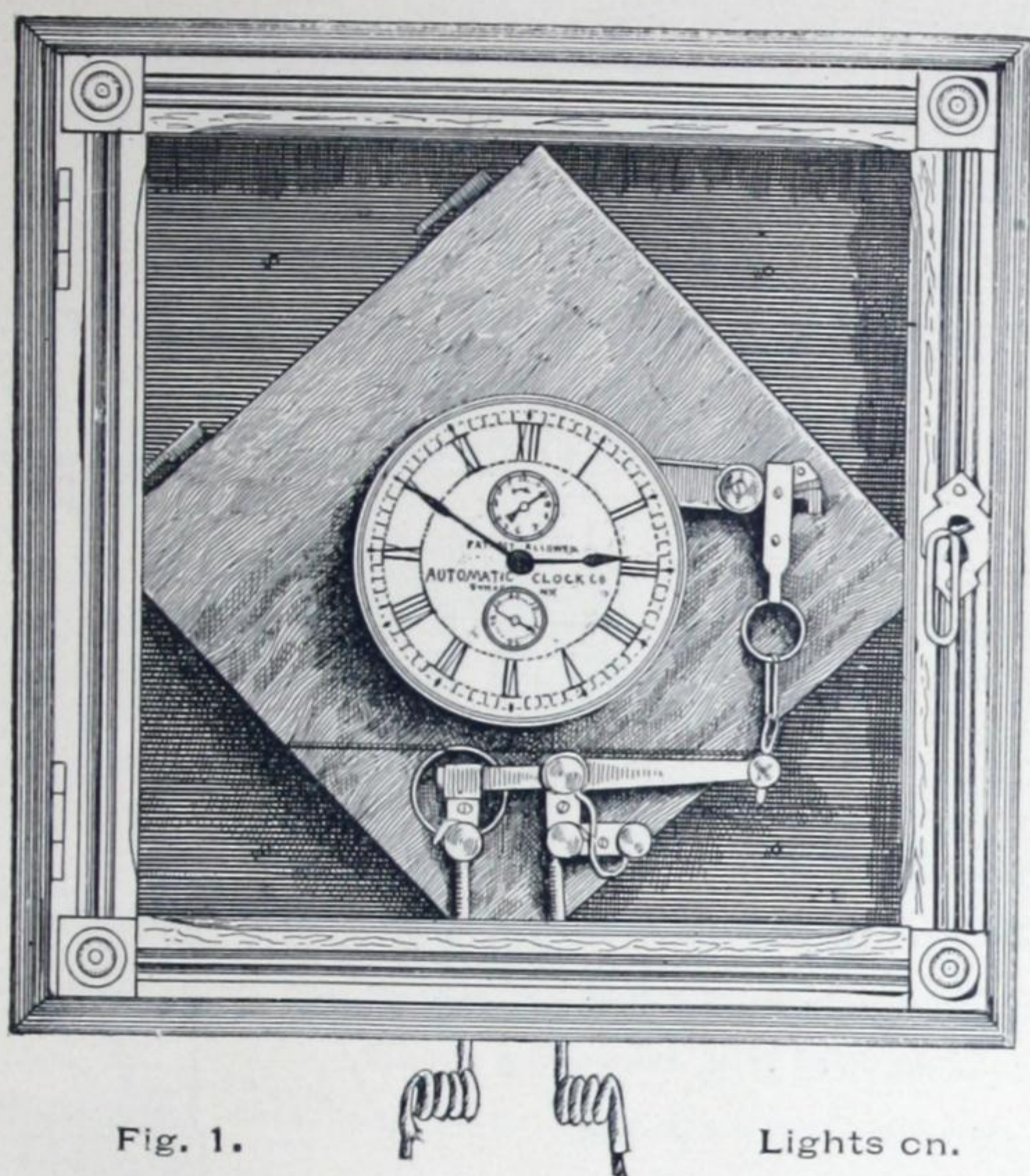


FIG. 1 shows the Automatic Clock with circuit closed. A bar drawn from the Clock detains the Traveler (which is attached to the Switch) on a slightly inclined track or bracket until the set time, when the bar slides into the clock; the obstruction being removed, the traveler rolls off, releases a spring connected with the switch and breaks the current.

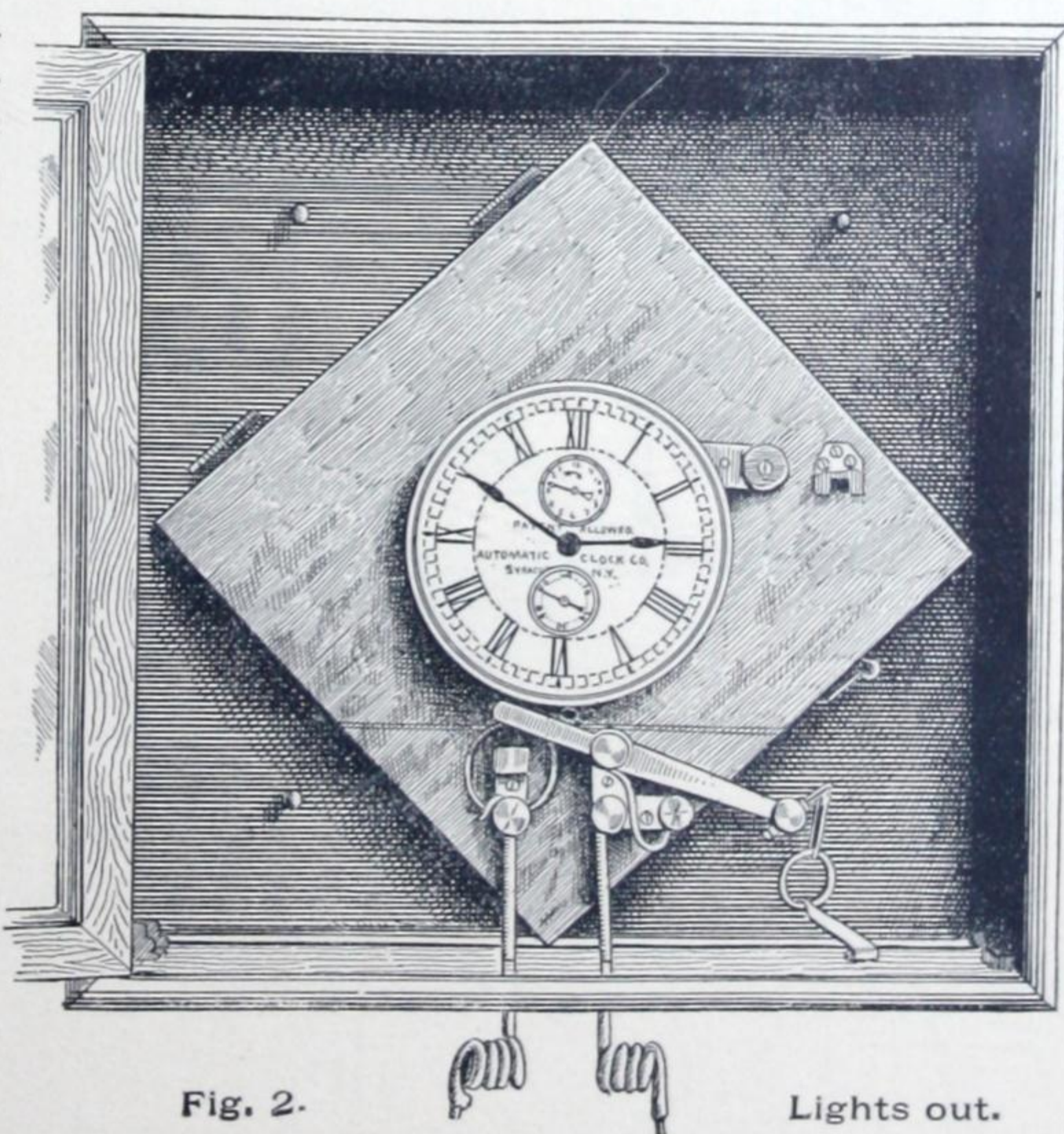
FIG. 2 shows the Automatic Clock with bar in the Clock; the track slightly inclined; the Traveler with spring released and circuit broken.

The Automatic Clock and Cut-out is very desirable for all merchants who wish to illuminate their show windows or store for a specified time during the evening without being under the expense of lamps and meter for a longer time than is necessary.

The Automatic Clock is an advantage to Electric Light Stations, from the fact that when the lights are cut out less power is needed, the consumer is satisfied, and many additional customers may be secured who, when they are made acquainted with the workings of the Automatic Clock and Cut-out, will use a number of lights for a few hours every evening.

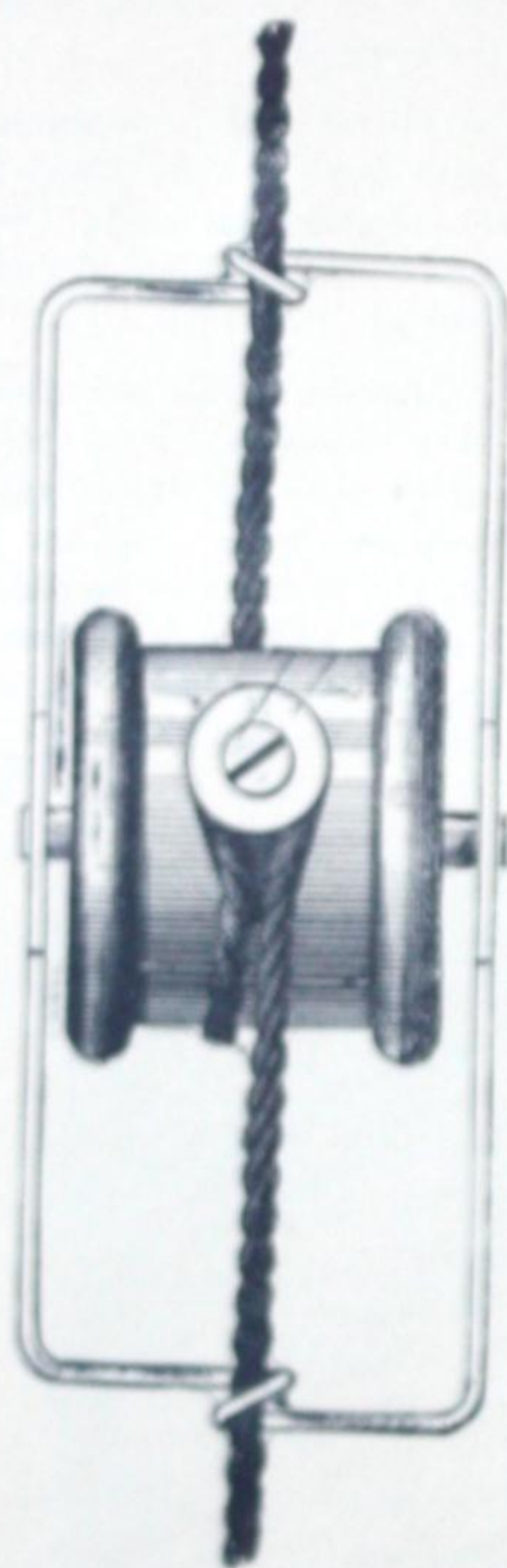
The Automatic Clock and Cut-out may be used in place of Meter. A lineman can set the clock daily, lock the case, keep the key and at the set time the lights will be cut out.

The Automatic Clock and Cut-out enclosed in a handsome case, highly polished natural wood, with glass door and good lock, price, \$25.00.



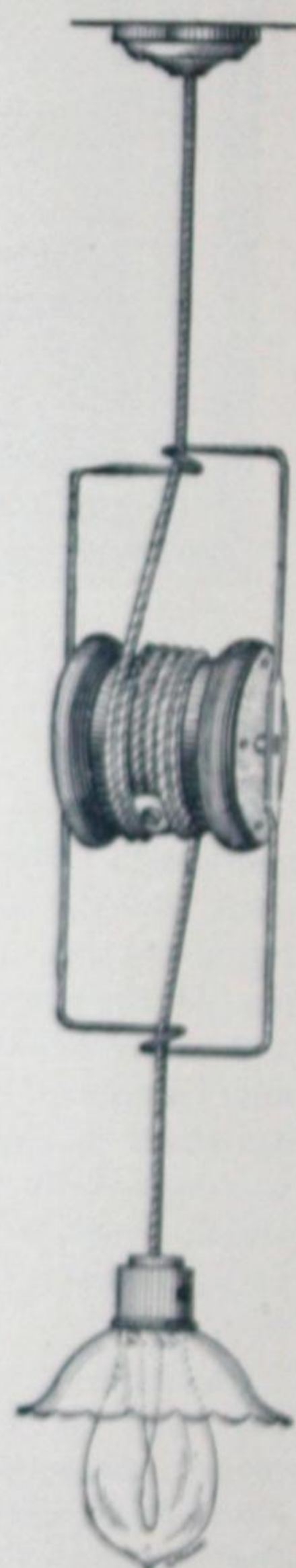
Newton Incandescent Lamp Extension.

PATENTED OCT..21, 1890.



Works on the same plan as a Spring Window Curtain Roller. It can be applied to a flexible cord of a lamp without removing the cord from the ceiling cut out, or removing the lamp socket from the cord. Applied or detached without interfering with the electric circuit in any way. A most useful device in offices, etc., as a trial will convince. Neatly finished in oil and nickel.

Price.....\$1.50



Incandescent Fittings.

ADJUSTING BALL.

For Adjusting Flexible Pendants.

Cut shows manner of use.

Price, Wood\$0.05

PEANUT ADJUSTERS.



Easily applied to the Lamp Cord.

Used in same manner as the Ball.

Wood Price, \$0.02
Rubber " .10



E. E. & S. SOCKET HANDLE.

Screws into the socket, the lamp cord passing through the hole in handle shown in cut. Used to transfer the position of a hanging lamp.

Very handsomely finished.

Price\$0.50

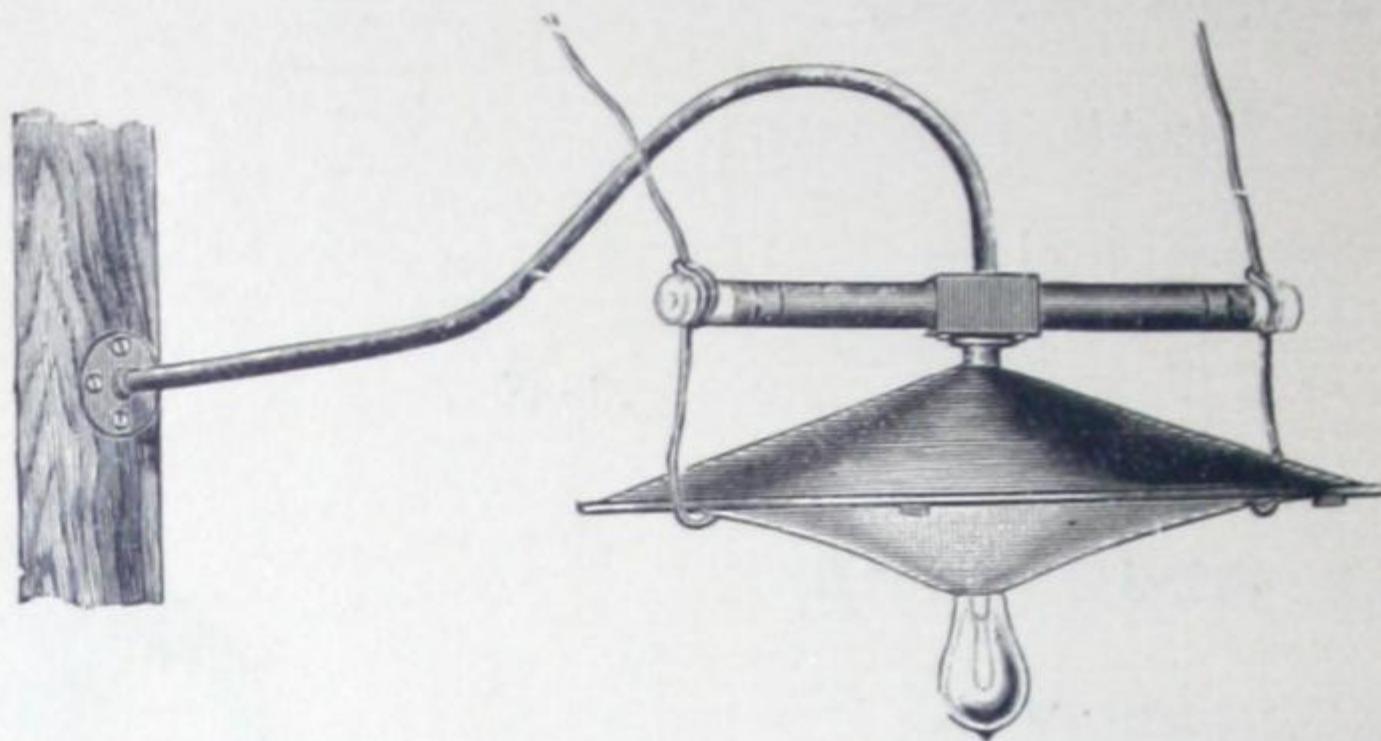


ATTACHMENT OR WALL PLUG.

Made for Thomson-Houston, Westinghouse, Edison and other systems. Well constructed and neat in appearance.

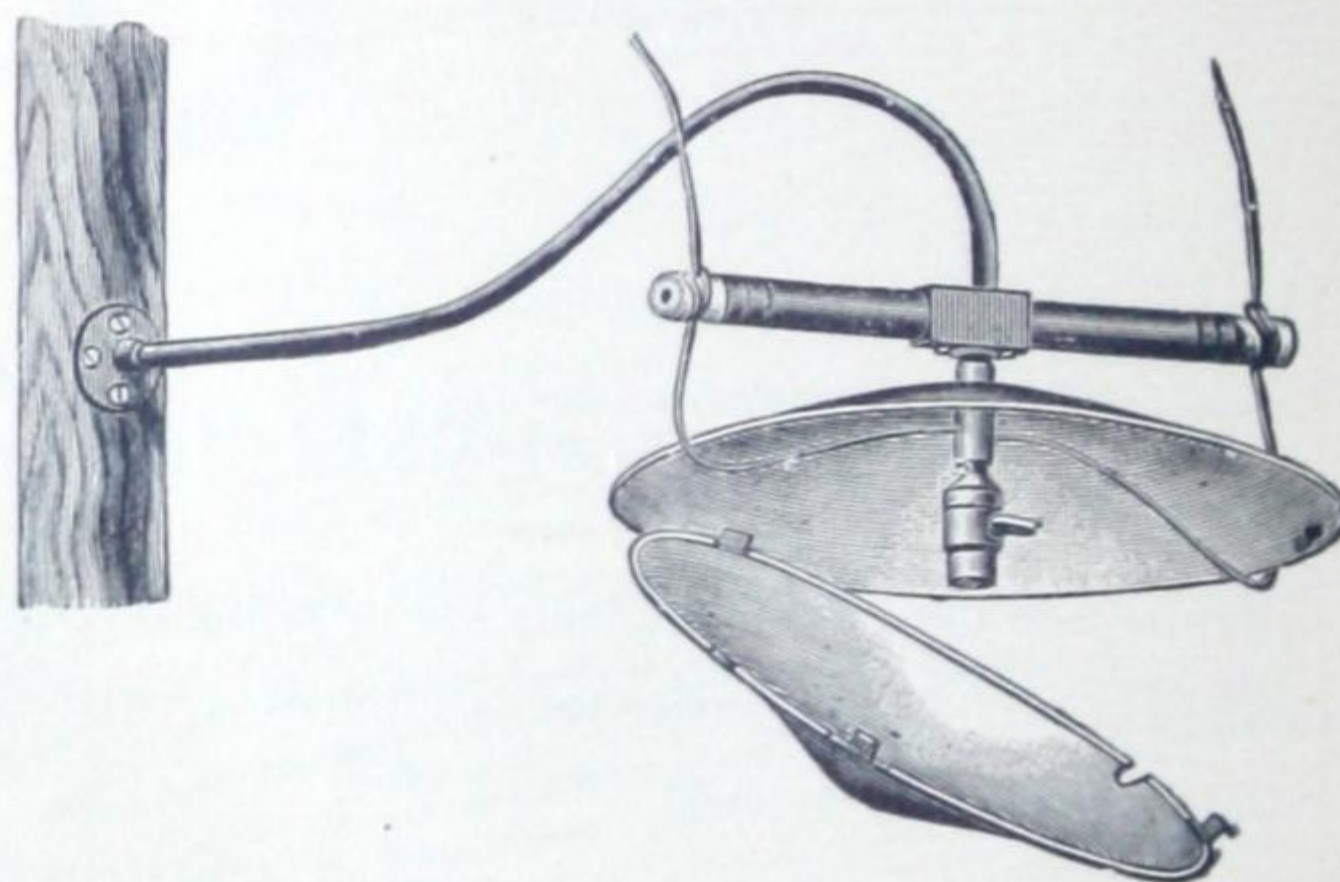
Price\$0.25

Street Hoods for Incandescent Lighting.

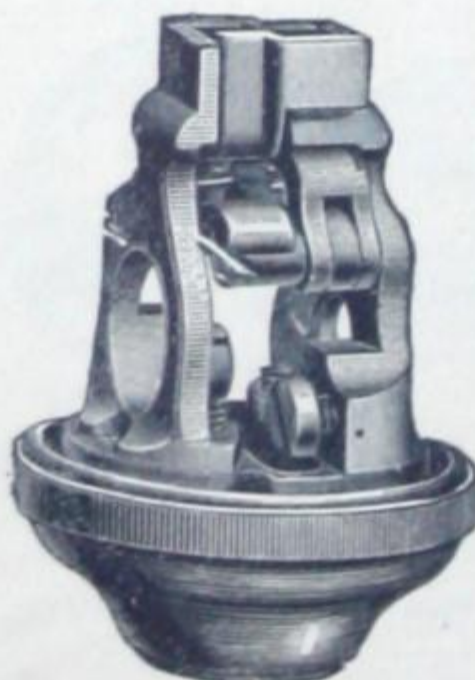


This improved Street Hood Fixture at once protects the Socket from the weather and forms a cheap and unbreakable Reflector. The Socket is completely enclosed and protected from the weather, yet is easily accessible for wiring or renewing a burnt-out Contact. Any make of Lamp Socket can be fitted to the Hood by using reducing nipples.

Price, with Bracket Arm.....	\$2.50
" Hood with Cross Arm.....	1 50



LAMP REMOVED AND SOCKET EXPOSED



Contact.

Price.....	Each, \$0.25
Charges for refilling Contacts.....	" .05

Combination Socket.

Combination Socket, including 1 Contact.....	\$3.75
--	--------

To replace a burned-out Lamp: Turn the "Contact" to the "off" position, remove the burned-out Lamp, insert a new Lamp; remove the "Contact," insert a new "Contact" in the "off" position, turn the "Contact" to the "on" position, and the Lamp will burn.

Bernstein Incandescent Lamps.



Bernstein Series Lamps.

Efficiency, 3 Watts per Candle.

Type.	C. P.	For Currents of From—	Price
"E" -----	16 -----	4 to 6 Ampères -----	\$1.50
"J" -----	25 -----	3 " 10 " -----	1.50
"K" -----	50 -----	4 " 10 " -----	2.00
"M" -----	75 -----	6.5 " 10 " -----	2.25
"L" -----	100 -----	8.5 " 10 " -----	2.75

We allow 12 cents each for burned-out or broken lamps with platinum intact, returned to our factory, charges paid.

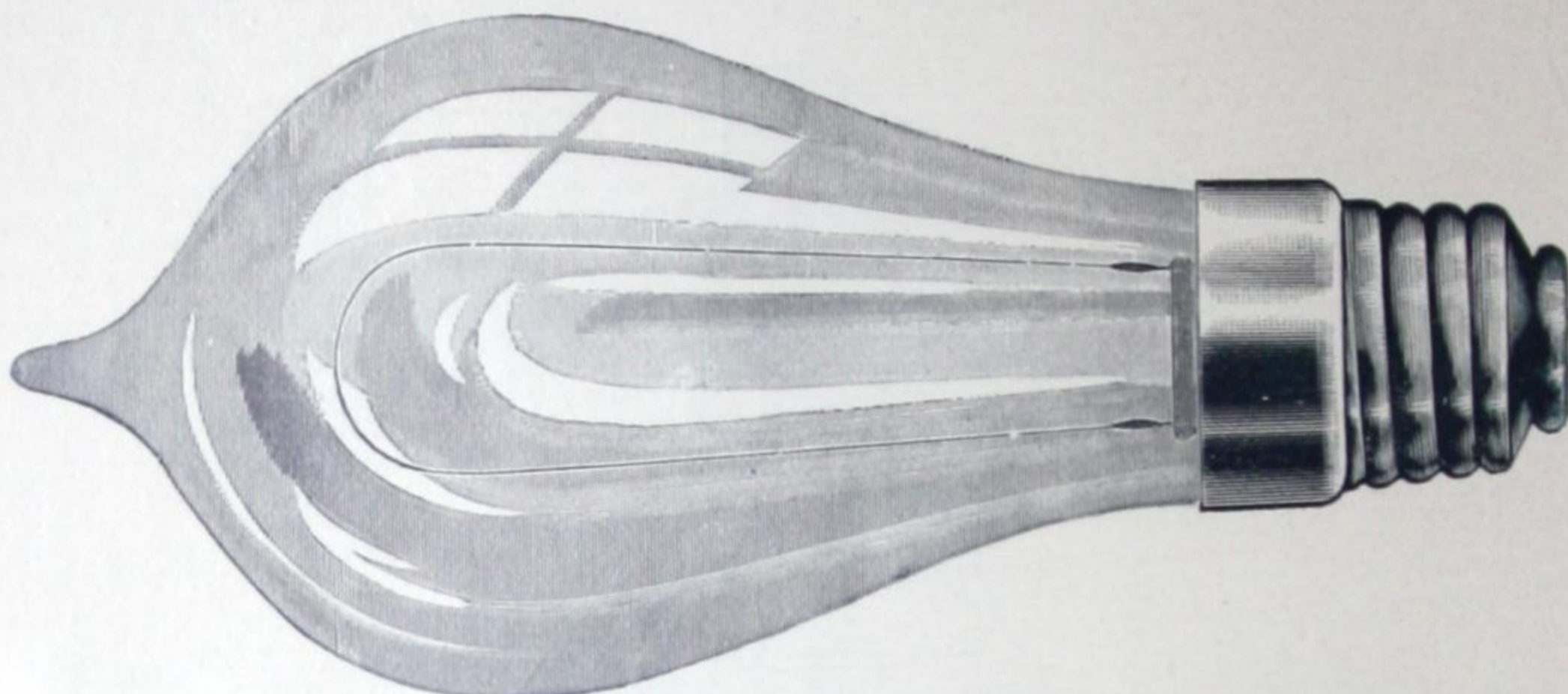
Bernstein Multiple Lamps.

For All Systems.

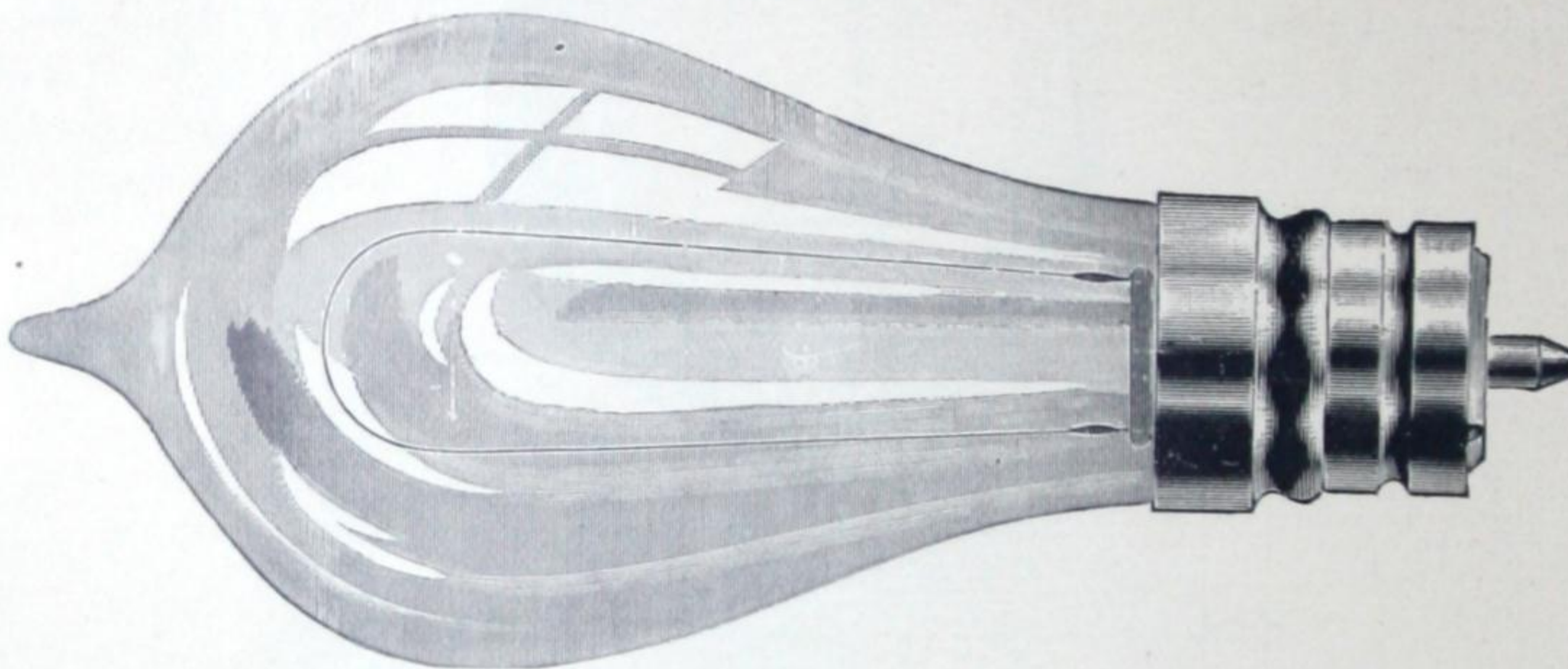
Candle Power, -----	16	20	25	32	50
55 volts and under, -----	\$0.70	\$0.75	\$0.80	\$0.90	\$1.50
Above 55 volts, -----	.75	.80	.85	.95	1.50

In Ordering Lamps, Please State Make of Socket Used.

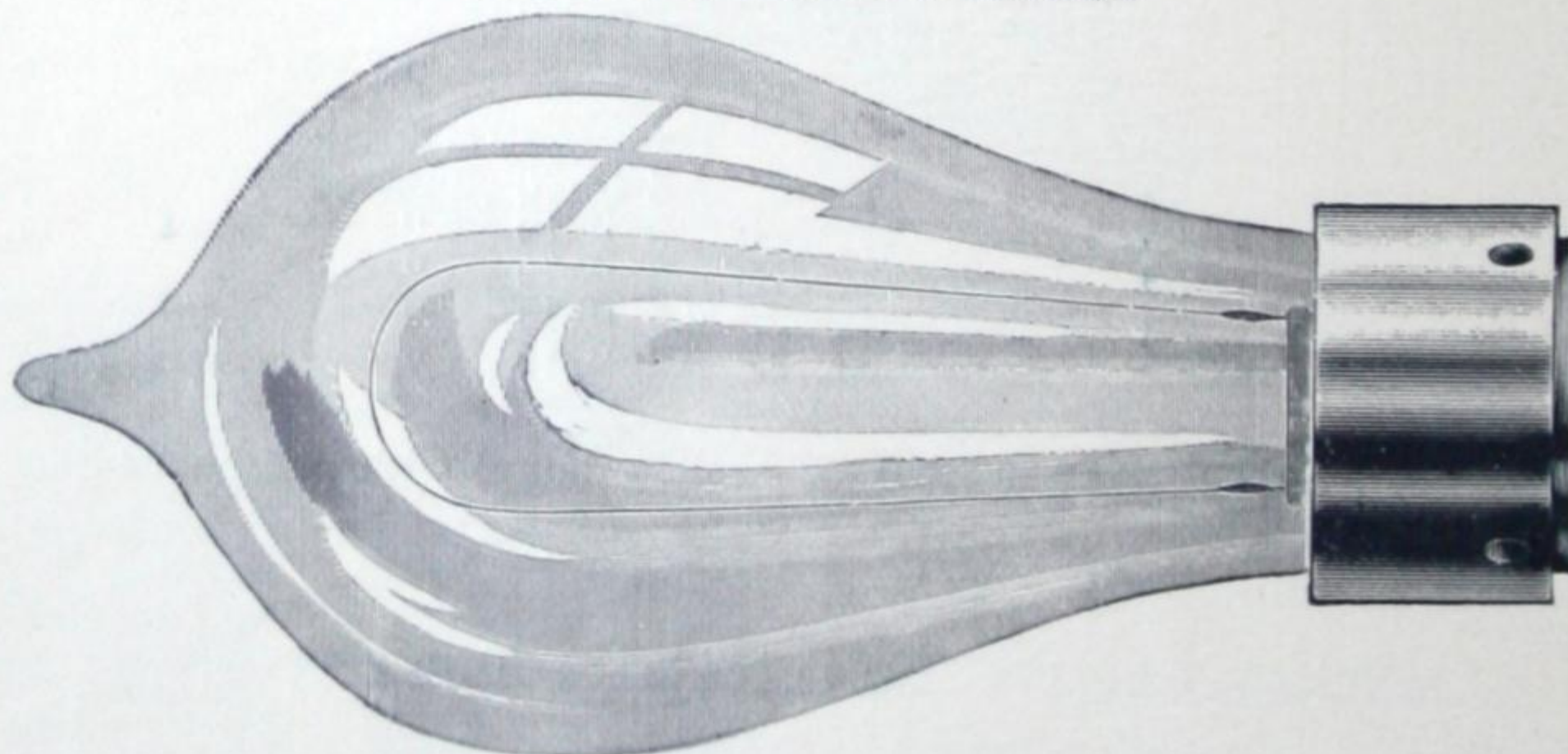
Incandescent Lamps.



TO FIT EDISON SOCKET.



TO FIT SAWYER-MAN SOCKET.



TO FIT THOMSON-HOUSTON SOCKET.

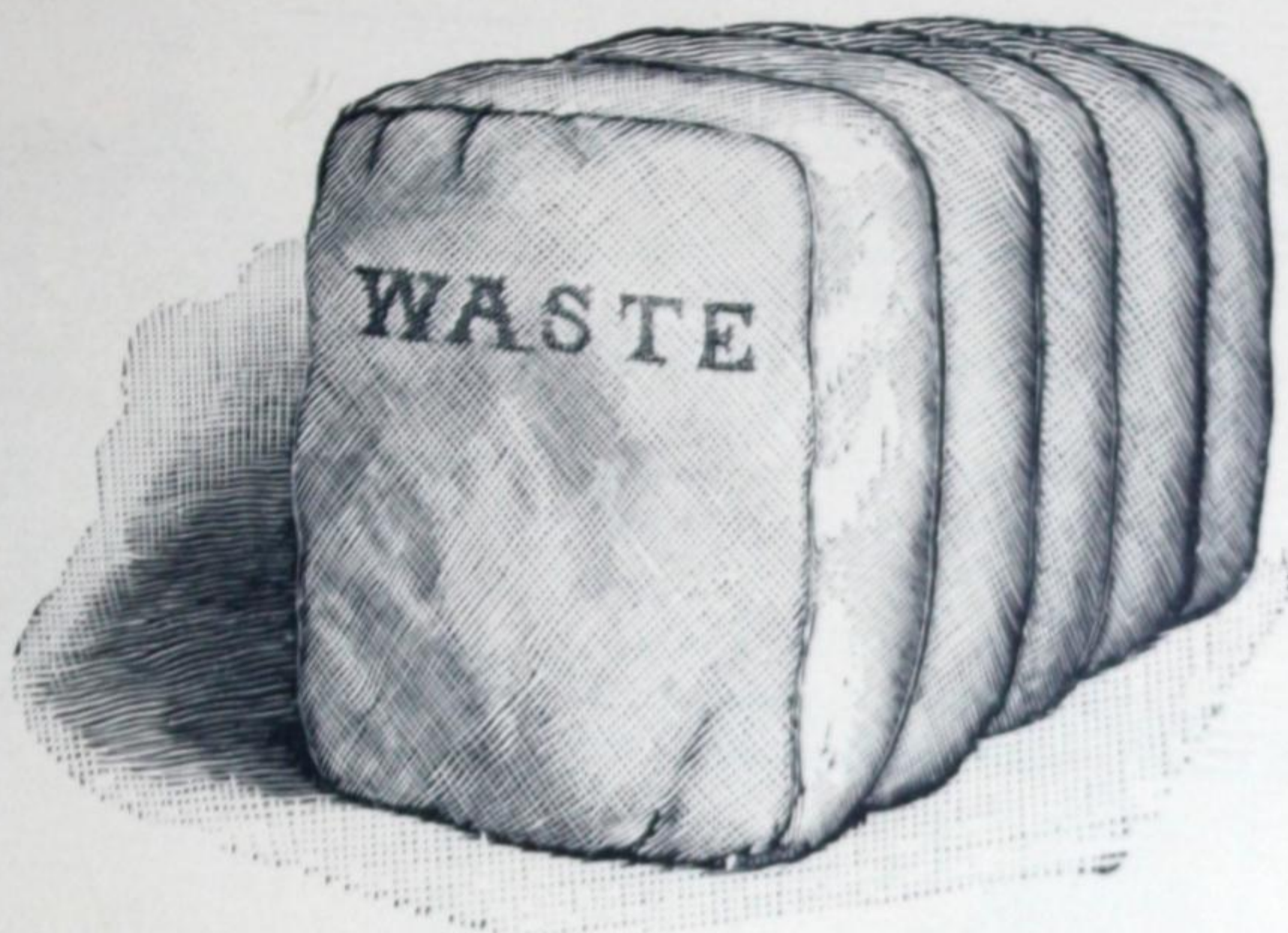
Thomson-Houston, Sawyer-Man and Edison Bases Always in Stock. Can be
Furnished for Any Socket.

PRICE LIST.

Candle Power,-----	16	20	25	32	50
55 Volts and Under,-----	\$0.70	.75	.80	.90	1.50
Above 55 Volts,-----	.75	.80	.85	.95	1.50

In Ordering Lamps, Please State Make of Socket Used.

Cotton Waste.



White, ----- Per Pound, \$0.15
Colored, ----- " .12½

ENAMELED CLOTH, FOR DYNAMO COVERS.

IN ROLLS OF 12 YARDS, 45 INCHES WIDE.

Price, ----- Per Yard, \$0.35

DYNAMO-ROOM RUBBER MAT.

Size, 18x30 Inches, ----- Each, \$3.65

LAMP ROD POLISHING CLOTH.

CROCUS CLOTH, FOR INSIDE ARC LAMPS.

This will not scratch the rod, but will give it a fine polish, removing all dirt. Crocus Cloth should not be used outside in damp weather, as it is likely to gum the rods, causing them to stick.

Price in Full Sheets, ----- Per Quire, \$1.10

EMERY CLOTH, FOR OUTSIDE ARC LAMPS.

This will clean the rods and will not gum them in damp weather, but will wear the rods faster, causing the replacing of new rods oftener than if Crocus Cloth is used.

Price in Full Sheets, ----- Per Quire, \$1.10

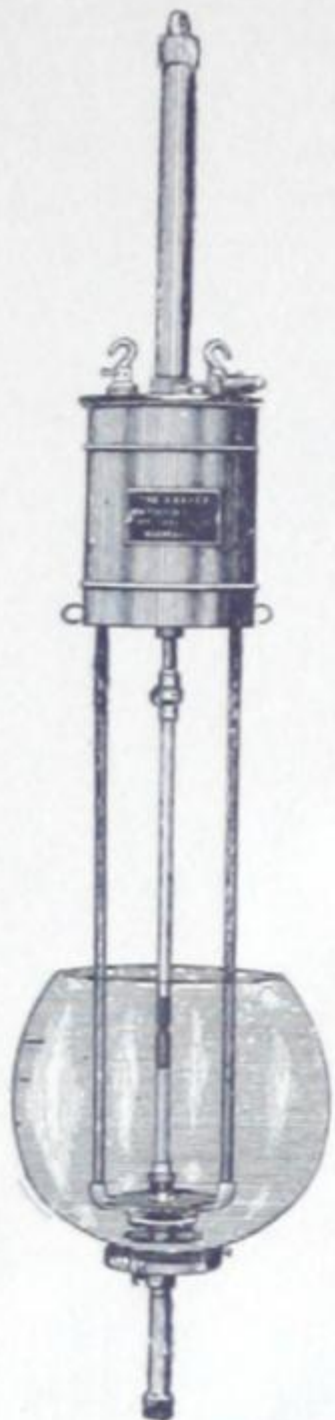
EMERY PAPER.

No. 0, ----- Per Quire, \$0.45
" 2, ----- " .47

EMERY CLOTH.

Nos.,	0	½	1	1½	2	2½
Per Quire,	\$1.00	1.00	1.00	1.00	1.10	1.30

The Graves Arc Lamp



These lamps are manufactured in four different varieties:

First. Single Carbon Lamps, to burn singly on incandescent circuits.

Second. Single Carbon Lamps, to burn two in series, on incandescent circuits.

Third. Single Carbon Lamps, to burn on regular, constant current arc circuits.

Fourth. Double Carbon Lamps, to burn both carbons at once, and in series with each other on incandescent circuits.

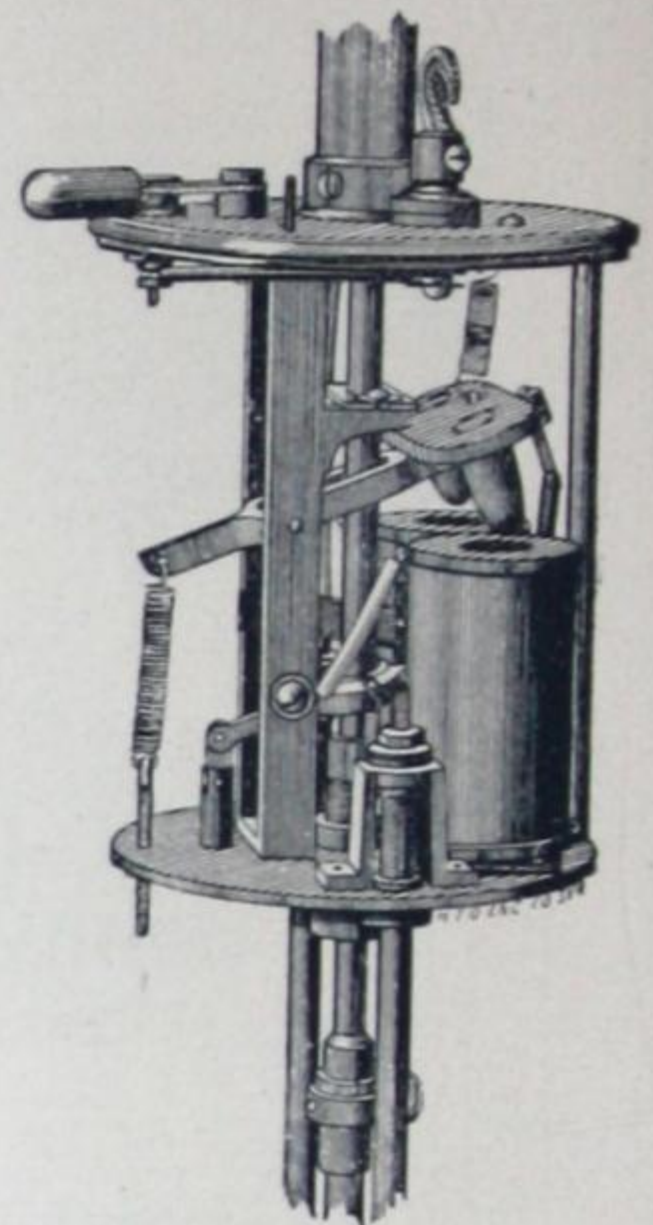
PRICE LIST.

Single Carbon for any system.....\$ 60.00
Double Carbon for incandescent circuits 100.00

Discount, 50 per cent.

Special discounts for large quantities.

Hoods \$1.00 extra.



Cut showing interior of The Graves Arc Lamp.

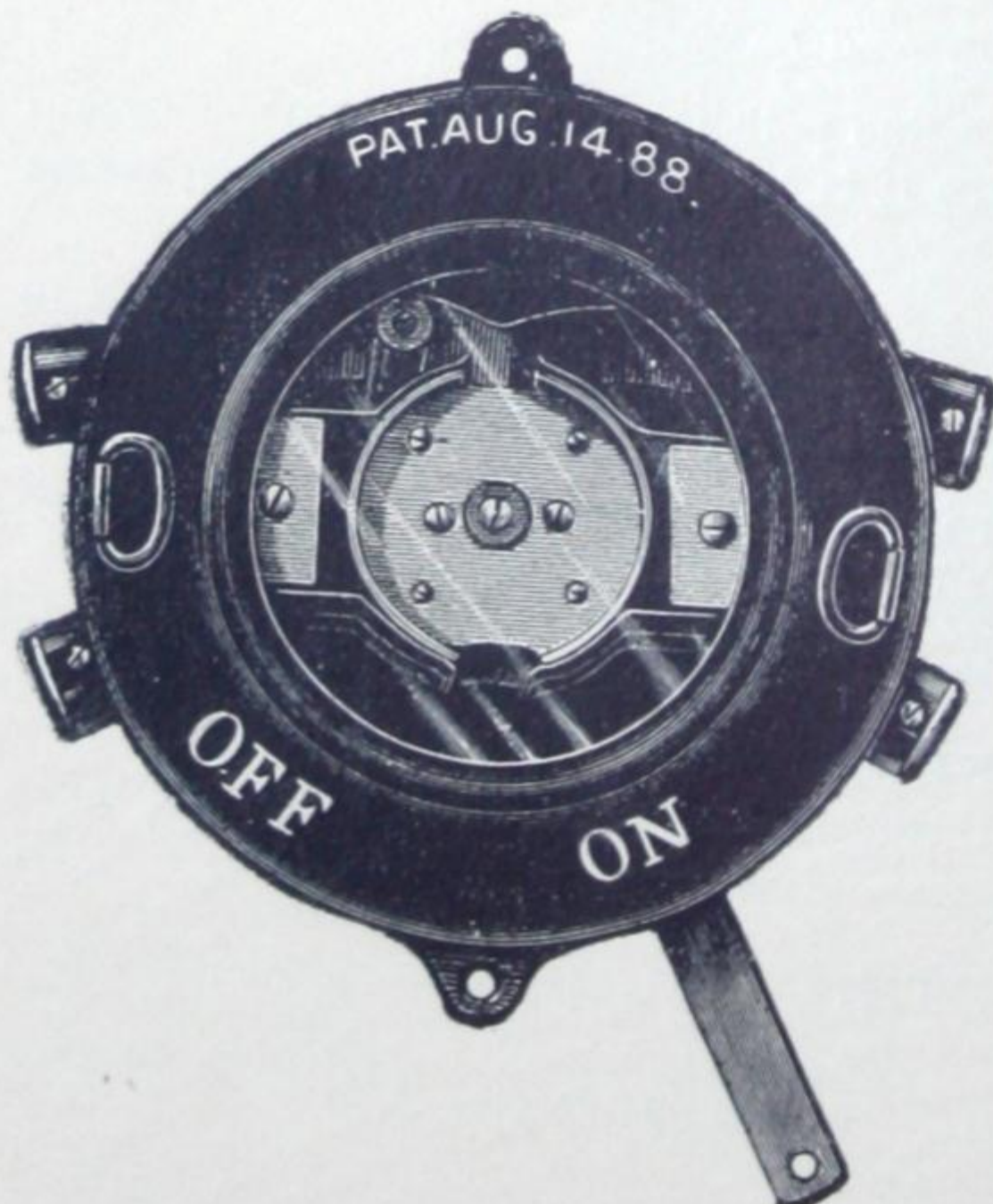
GLOBES.

Opal or Ground.....	Per Dozen, \$4.90	Clear or Half-Ground.....	Per Dozen, \$4.40
CASKS EXTRA.			
To contain 1 dozen Globes	\$1.00	To contain 2 dozen Globes.....	\$1.50

CARBON HOLDERS.

Upper	Each, \$0.30	Lower.....	Each, \$0.50
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POWERS' ARC LIGHT SWITCH

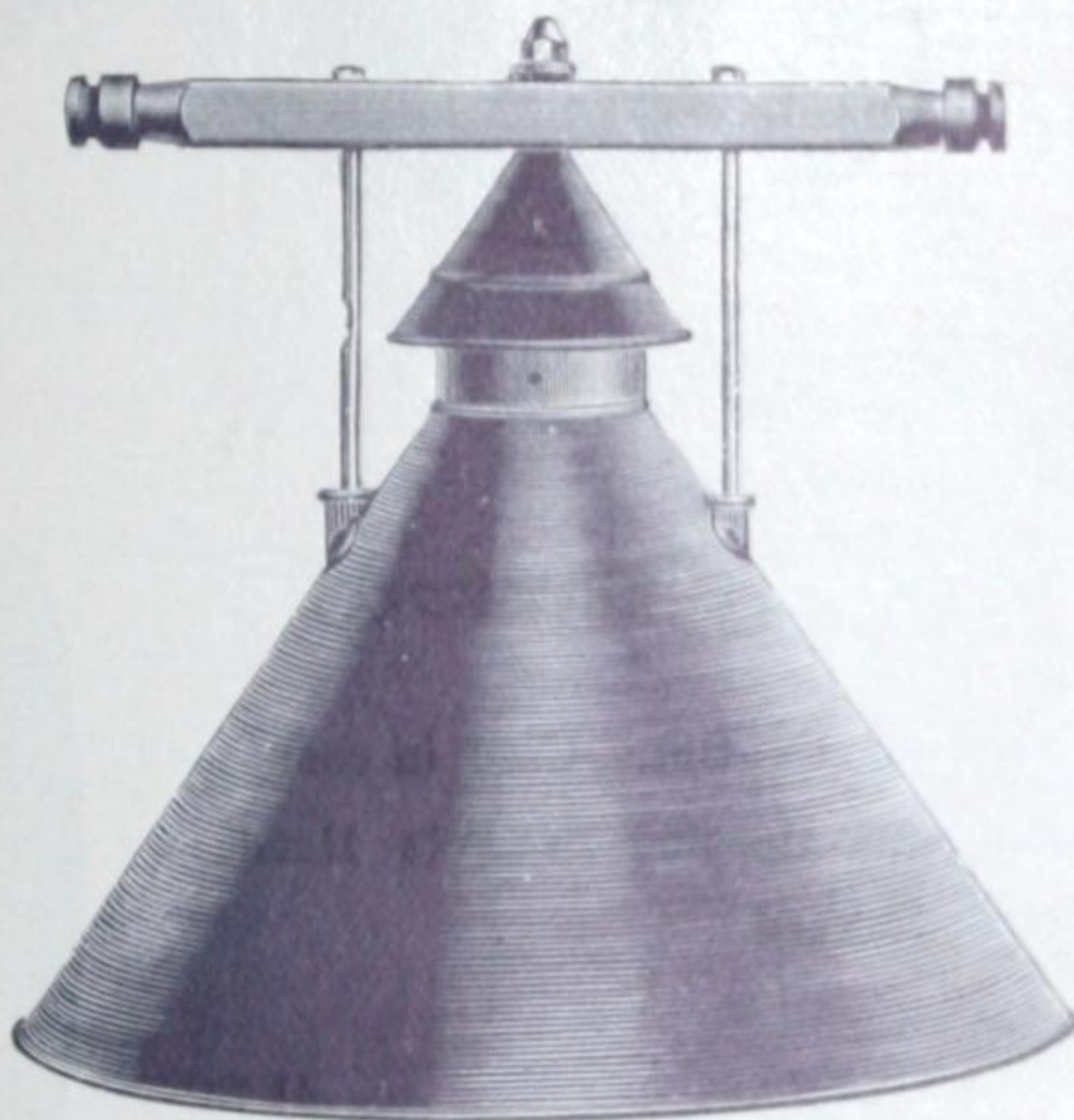
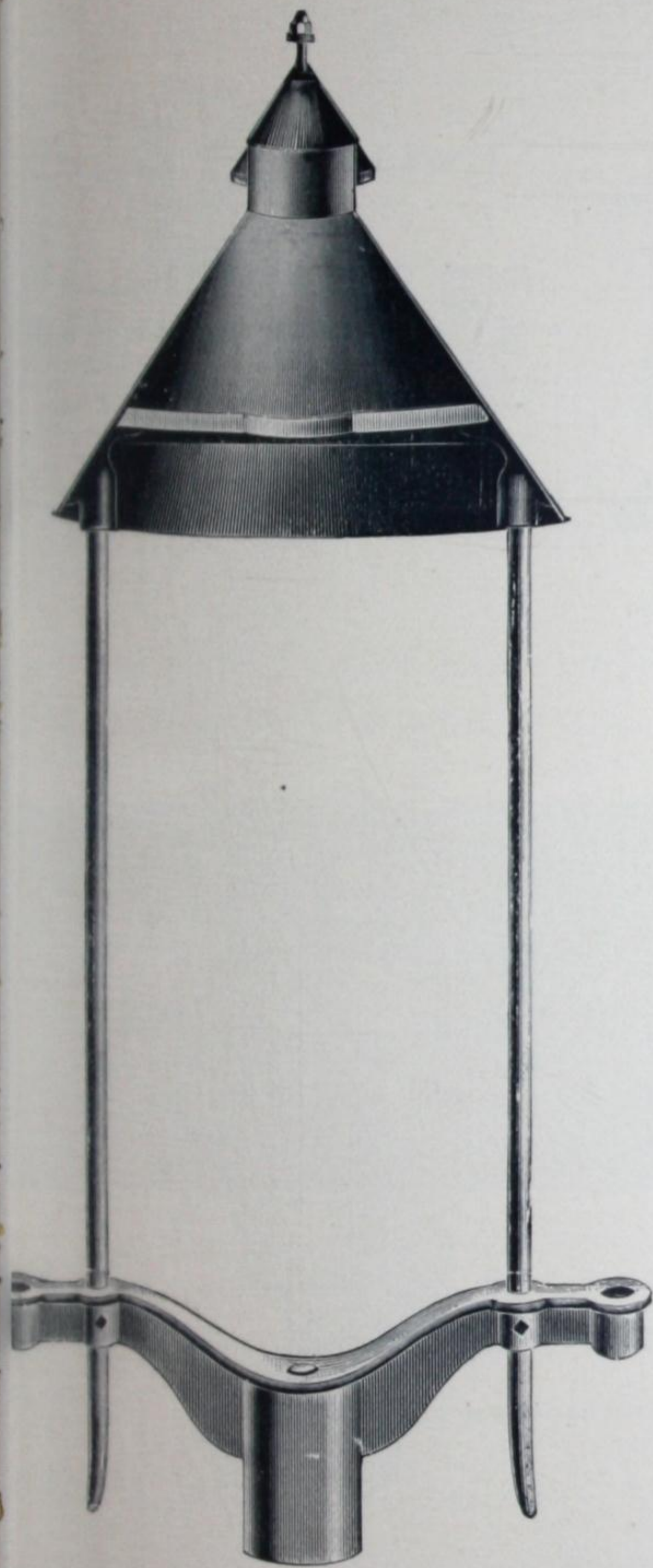


Made of porcelain, brass and iron and will carry 40 Amperes in safety. It has ample contact surface and a positive throw. Binding posts are arranged so that the wires cannot loosen.

Price.....\$5.00

Arc Lamp Hoods.

The combination Pole Iron and Hood to be used where the lamp is to be placed on top of a pole. The Pole Iron is neatly finished and Japanned.

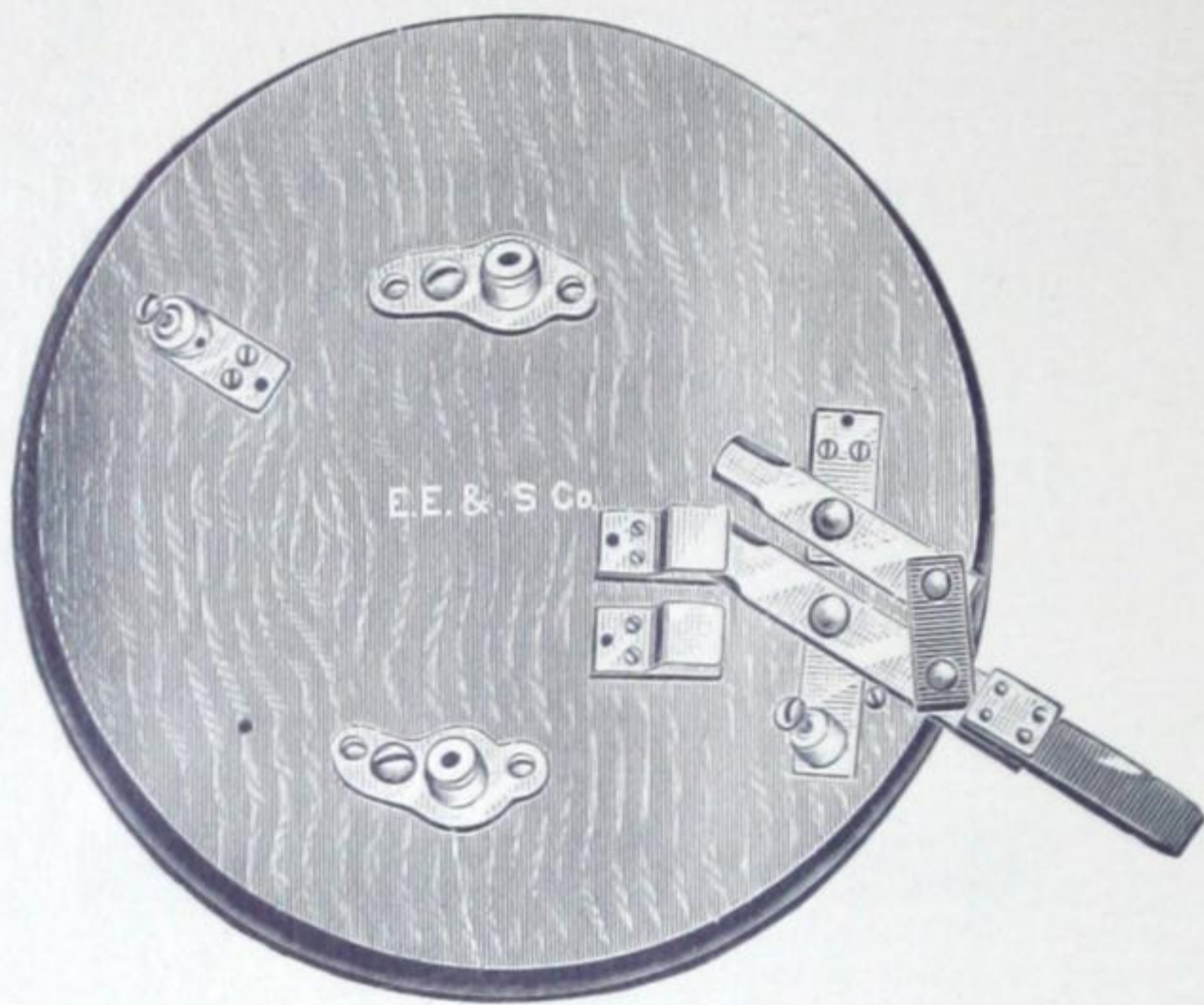


Lamp Hood to hang at street intersections or from Mast Arms. All the Hoods finished in Black and White Enamel.

Hoods manufactured for all systems.

Price, Pole Iron and Hood Complete.....	\$7.50
" Arc Hood.....	3.50

Arc Cut-Out Boards.



Ceiling Board.

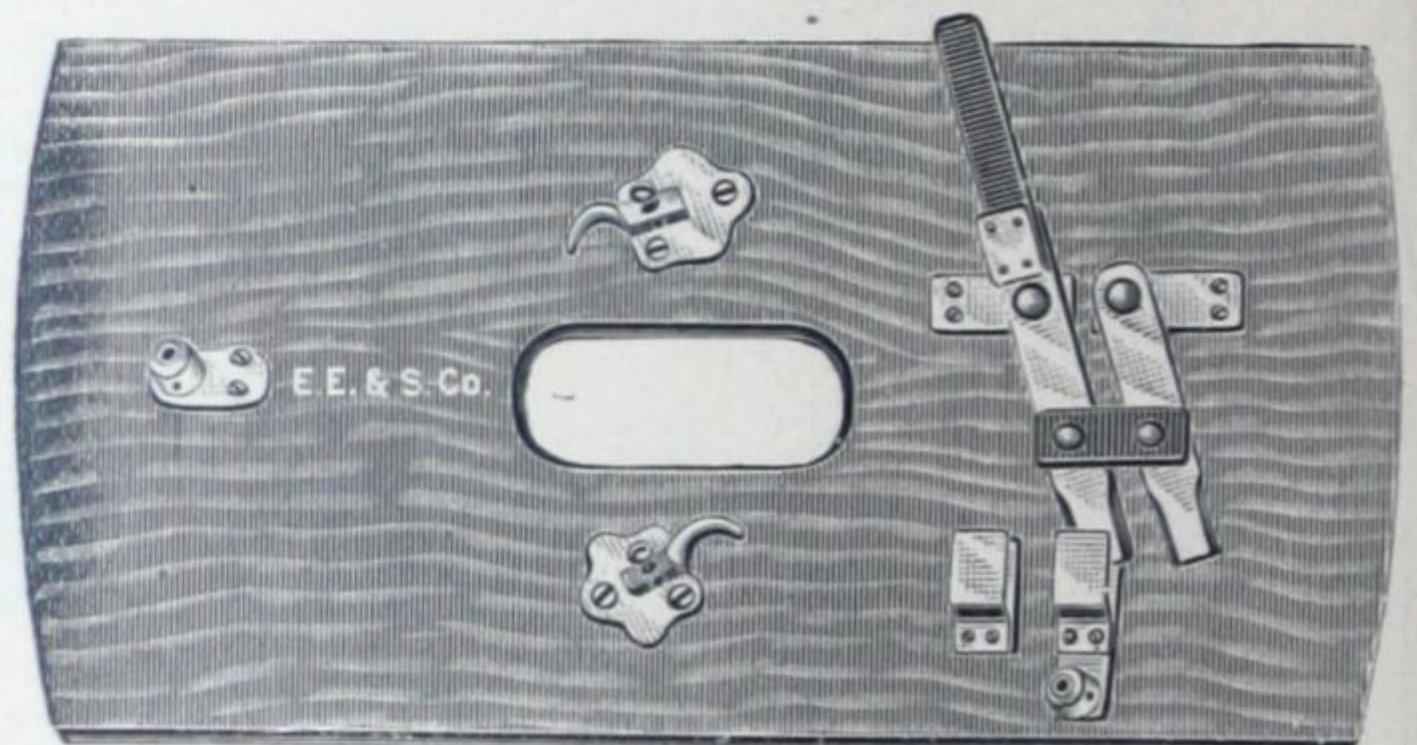
Made in Cherry or Oak. The pores of the wood are filled with an insulating material. Very finely finished.

Price\$2.00

Hood Board.

Absolute Cut-Out. Used in connection with Hanging or Pole Hoods. Neatly finished.

Price\$1.75



Weather Protectors.

To keep Snow, Wind and Rain out of Arc Lamp Globes.

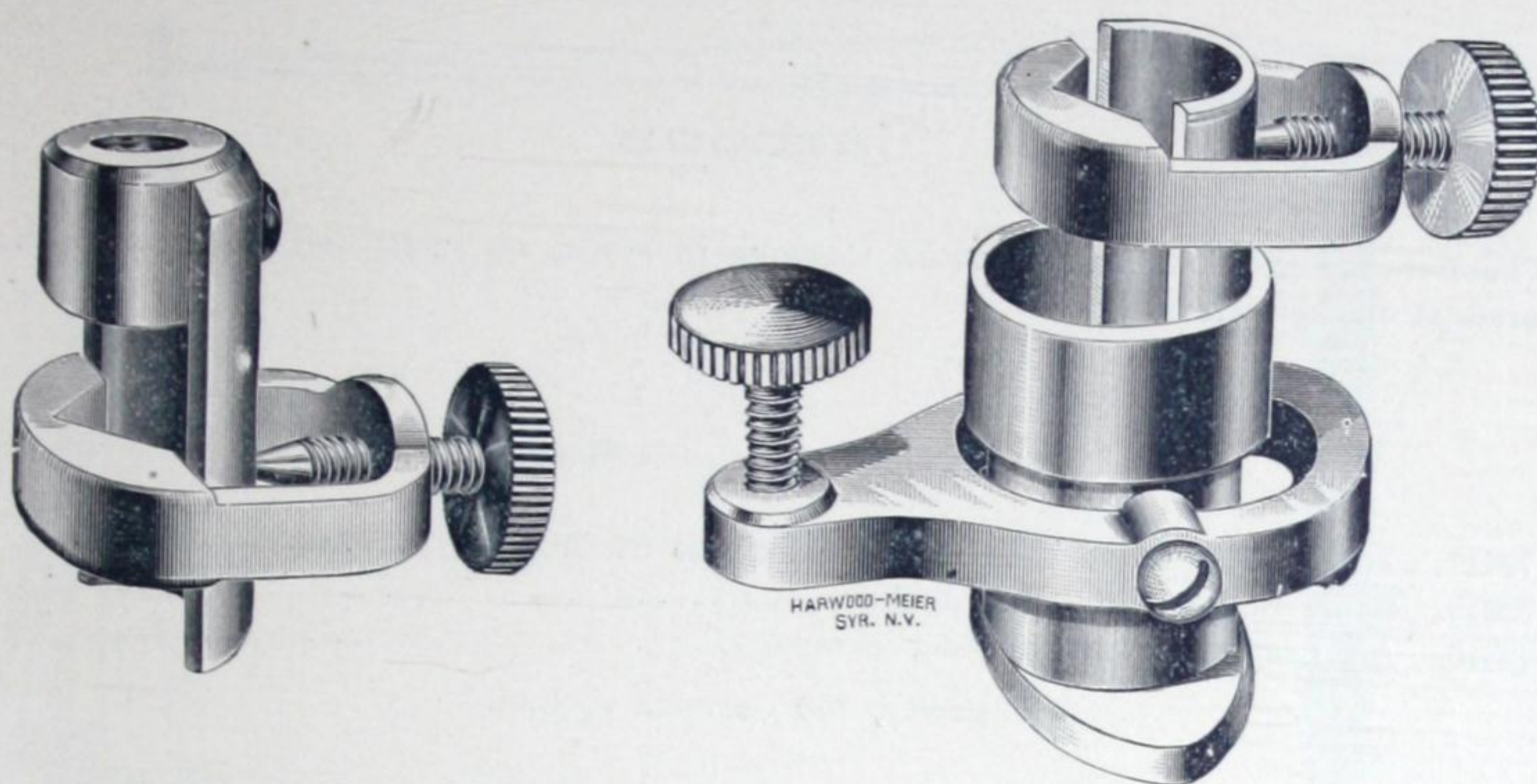
Price\$2.00

Spark Arresters.

To prevent Sparks from Carbons flying out of the Globe and setting fire to combustible material.

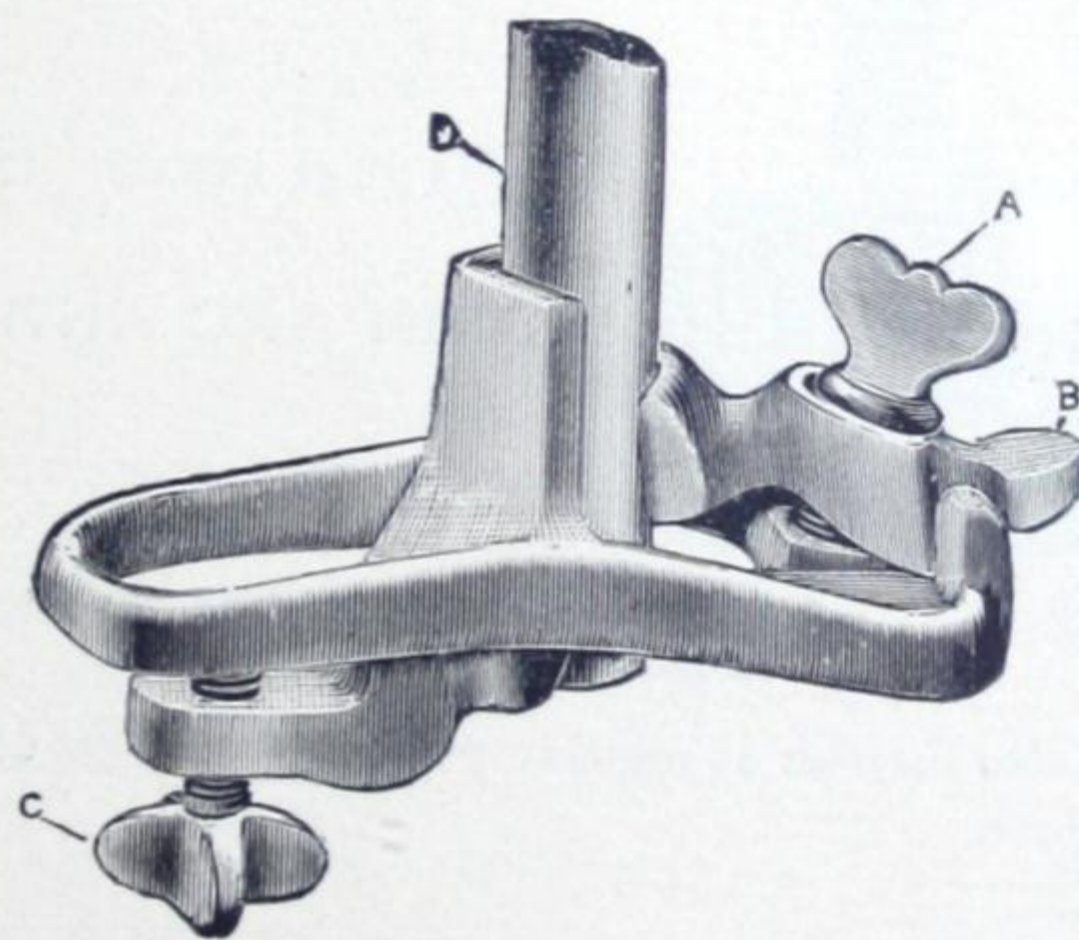
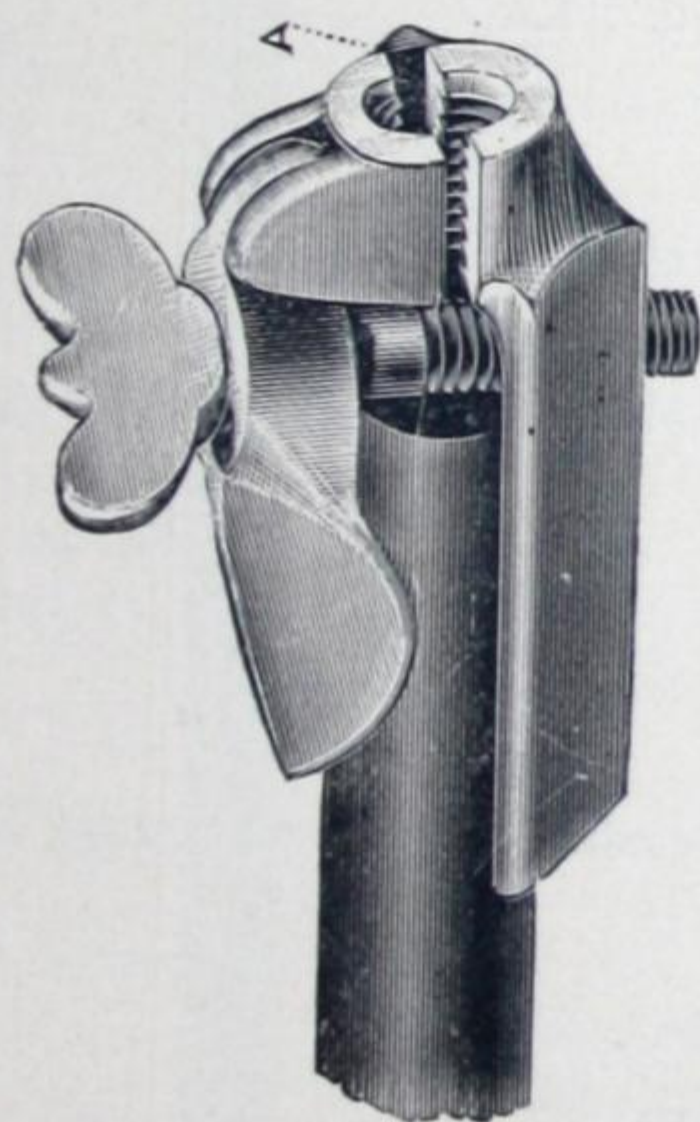
Price\$1.50

Carbon Holders.



Thomson-Houston
Standard Upper and Lower Carbon Holders.

Price, Upper,	-----	\$ 0.50
“ Lower,	-----	.75



Seymour's
Upper and Lower Carbon Holders.

Price, Upper,	-----	\$0.35
“ Lower,	-----	.40

LAMPS AND DYNAMOS REPAIRED.
Worn-out or Broken Parts for Any System Replaced.

Arc Light Supplies.

Carbons.

The Faraday and Thomson-Houston Carbons in stock, $\frac{7}{16}$ inch, and $\frac{1}{2}$ inch sizes, plain or coppered, at market prices.

Carbon Cases.

No. 73411.	Heavy Tin, made with Concave Side to fit the Body, -----	Each, \$2.25
" 72315.	Same Box, encased in Leather, -----	" 4.50
" 72316.	All Leather, with Shoulder Straps, -----	" 4.50

Capacity, 100 Carbons $\frac{7}{16}$ inch.

Rubber Gloves.

No. 72331.	With Wrists, -----	Per Pair, \$2.50
" 72333.	Without Wrists, -----	" " 1.90

State size wanted when ordered. There is a difference of three numbers between the same size of rubber and kid gloves, No. 10 rubber corresponding to No. 7 Kid.

Dynamo Brushes.

THOMSON-HOUSTON ARC AND INCANDESCENT BRUSHES.

Arc Brushes, -----	Per Set, \$.50
Incandescent Brushes No. 1, -----	Each 1.00
" " No. 2, -----	" 1.50
" " No. 3, -----	" 2.00

We also furnish at regular prices Generator and Motor Brushes for other systems, in Metal and Carbon.

Arc Plug Switch Board.

Slate Base. Made to order for any number of Circuits, fed from any number of Machines.

Feeder Board.

Highly finished Feeder Boards, for any number of Circuits, made to order. Feeder Boards from one to four Circuits in stock.

Mast Arm.



—THE—
STAR IRON TOWER CO.
MAST ARM.

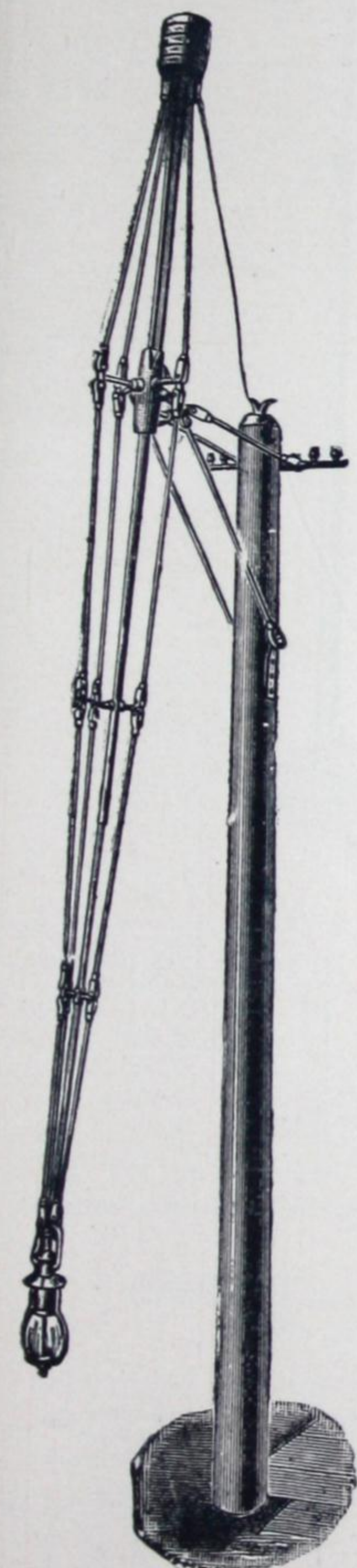


This illustration shows Mast Arm in position, with
lamp in centre of street.

PRICE LIST.

25 Feet from Pole to Lamp, -----	Each, \$50.00
20 " " " " " -----	" 40.00
18 " " " " " -----	" 35.00
15 " " " " " -----	" 30.00

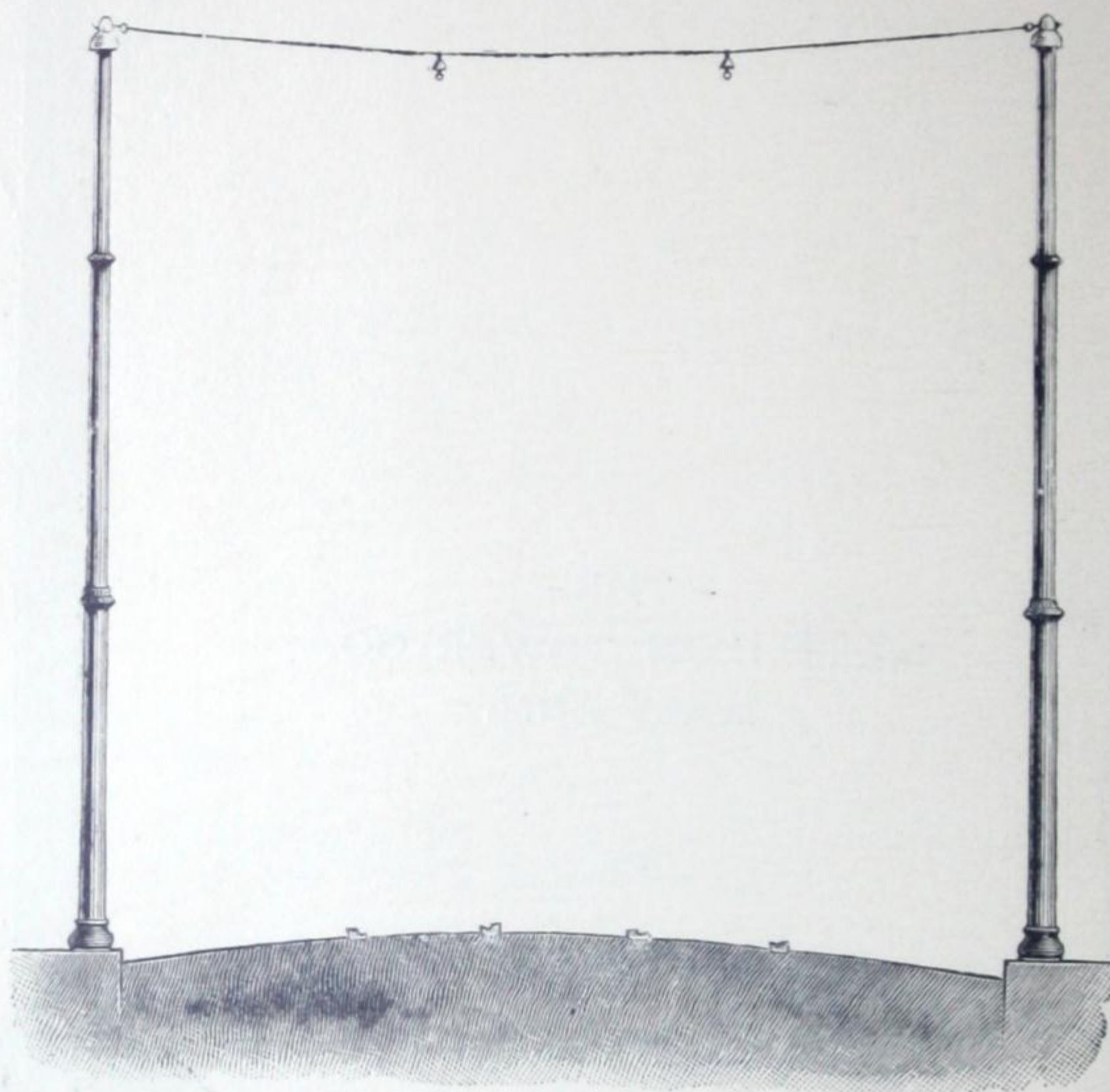
This is the most durable and substantial Arm in the market. We
can furnish a Stationary Arm, similar to several on the
market, by which the lamp is raised and
lowered by cable, at \$1. per foot.



This illustration shows Mast Arm lowered
with Lamp ready to be trimmed.

Pole for Span Wire System.

EXTRA STRONG PIPE.



1 A.

Size.	Made of Extra Strong Pipe.	Length.	Weight.	Price.	Castings, Insulator and Eye Bolts, extra.
No. 1	5 in., 4 in., 3 in.	27 ft.	500 lbs.	\$28.75	\$ 2.50
" 2	6 " 5 " 4 "	38 "	700 "	40.62	2.50
" 3	7 " 6 " 5 "	30 "	1000 "	56.25	4.37
" 4	8 " 7 " 6 "	30 "	1300 "	73.12	5.95

These Poles will sustain the following strains on the Span Wire, without permanent deflection :

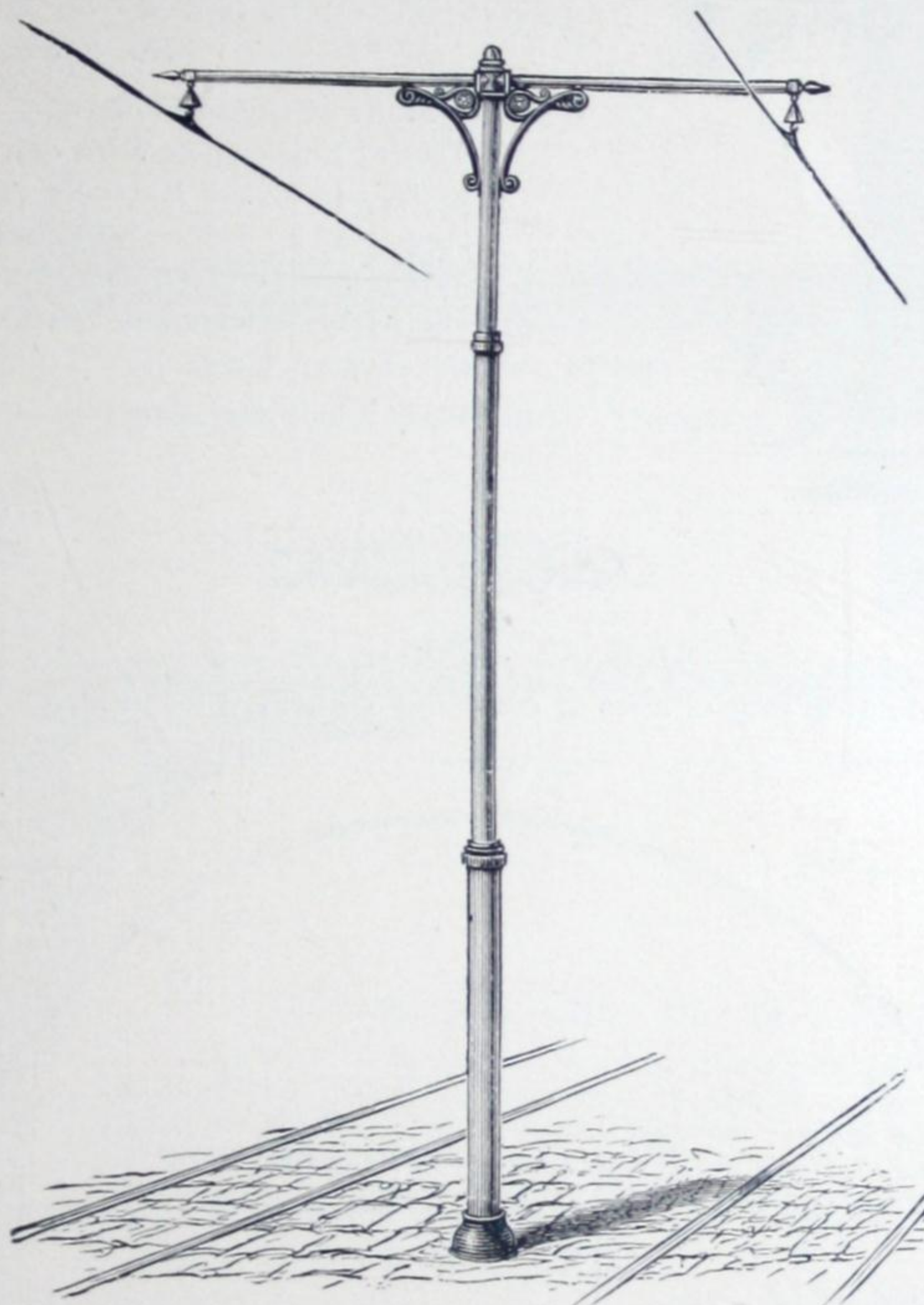
No. 1, -----1000 pounds.
" 2, -----1500 "

No. 3, -----2500 pounds.
" 4, -----4000 "

Size.	Made of Standard Weight Pipe.	Length.	Weight.	Price.	Castings, Insulator and Eye Bolts, extra.
No. 1	5 in., 4 in., 3 in.	27 ft.	350 lbs.	\$21.25	\$ 2.50
" 2	6 " 5 " 4 "	28 "	475 "	28.12	2.50
" 3	7 " 6 " 5 "	30 "	600 "	41.25	4.37
" 4	8 " 7 " 6 "	30 "	825 "	55.00	5.95

Center Pole.

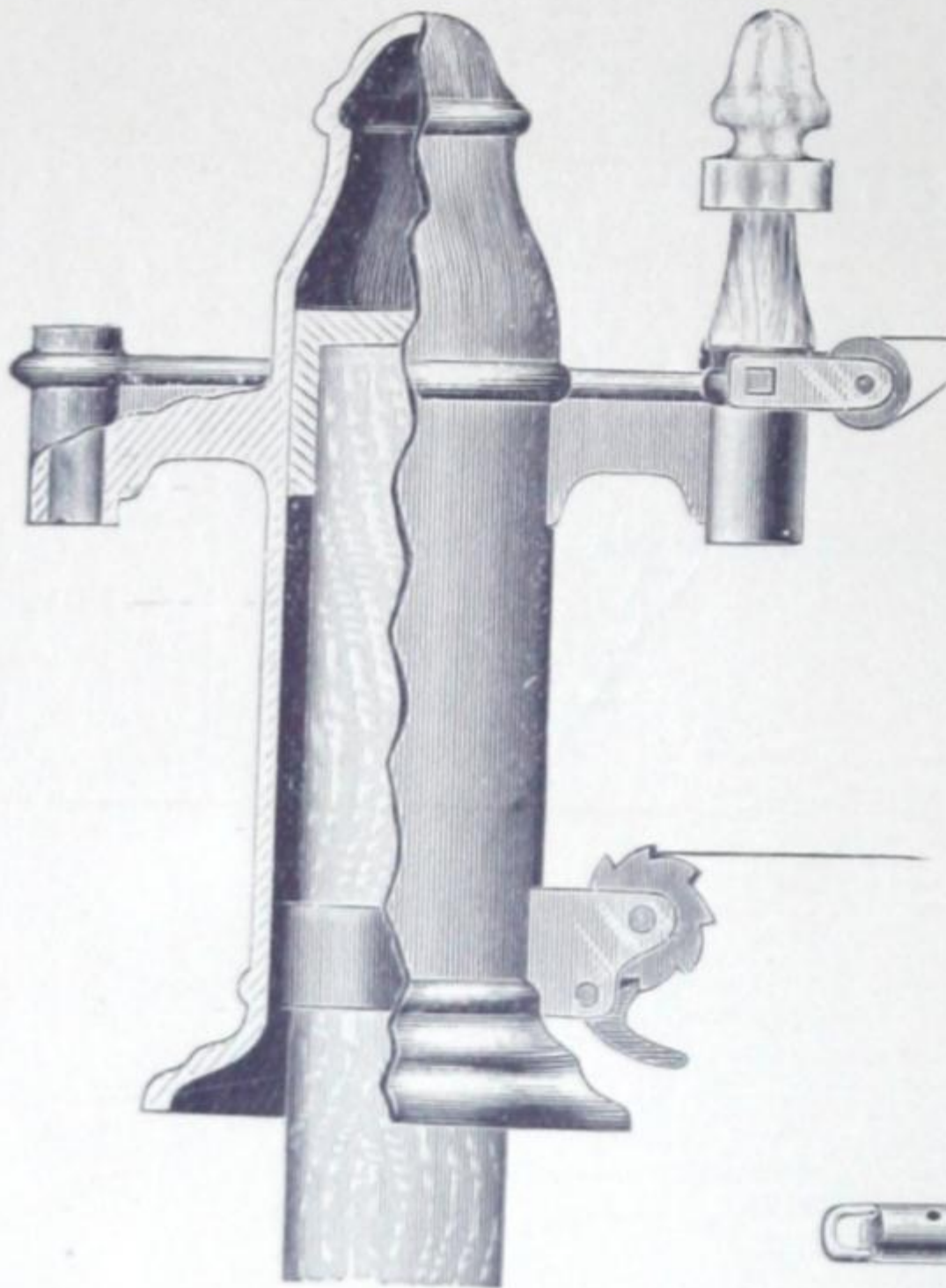
WITH BRACKETS.



16 A.

		Standard Weight, Complete,	Extra Strong, Complete.
No. 1.	5 in., 4 in., 3 in. Pipe,-----	\$34.37	\$50.00
" 2.	6 " 5 " 4 " "-----	46.87	62.50

Railroad Supplies.



Pole Tops.

IMPROVED COMBINATION POLE TOP.

No. R 35.

Made of one solid casting. Any slack in the Trolley Suspension Wire can readily be taken up by use of the Ratchet. The Guard Wire is supported by a porcelain insulator. The Feed Wires are conveniently placed above the Guard Wire which is considerably above the Suspension Wire.

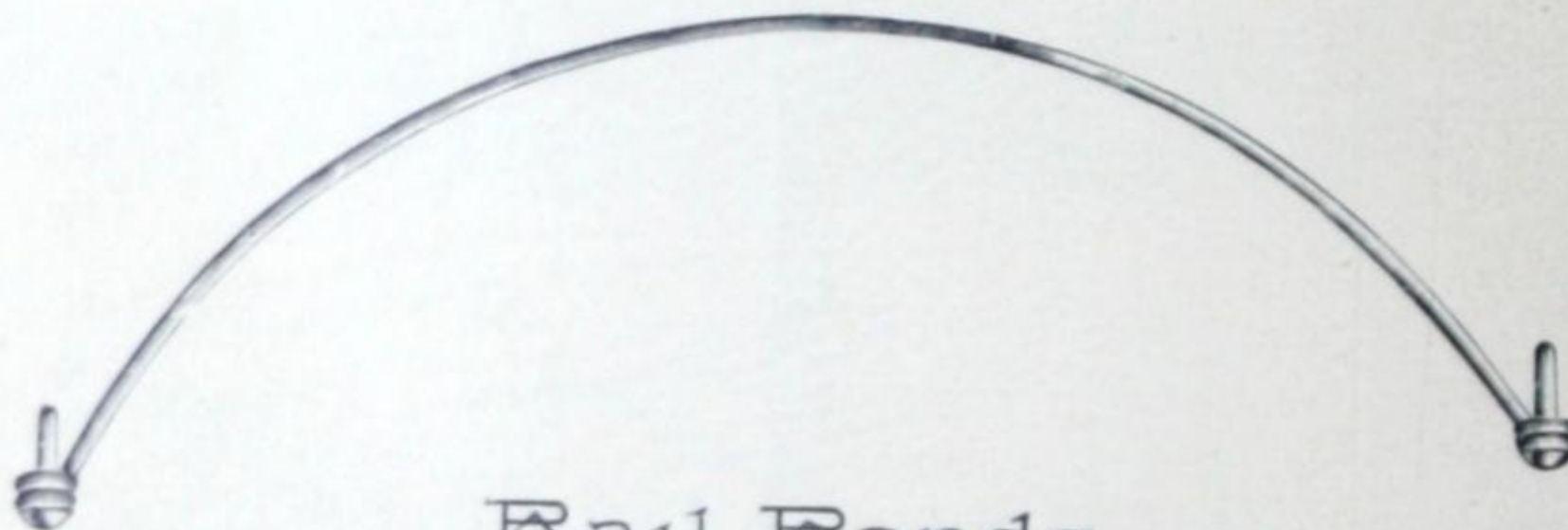
Price Complete,-----Each \$2.50



Strain Insulator.

A reliable device for holding ends of lines at curves or corners where there is an unusual strain.

No. R 14, Strain Insulators,-----Each \$0.60



Rail Bonds.

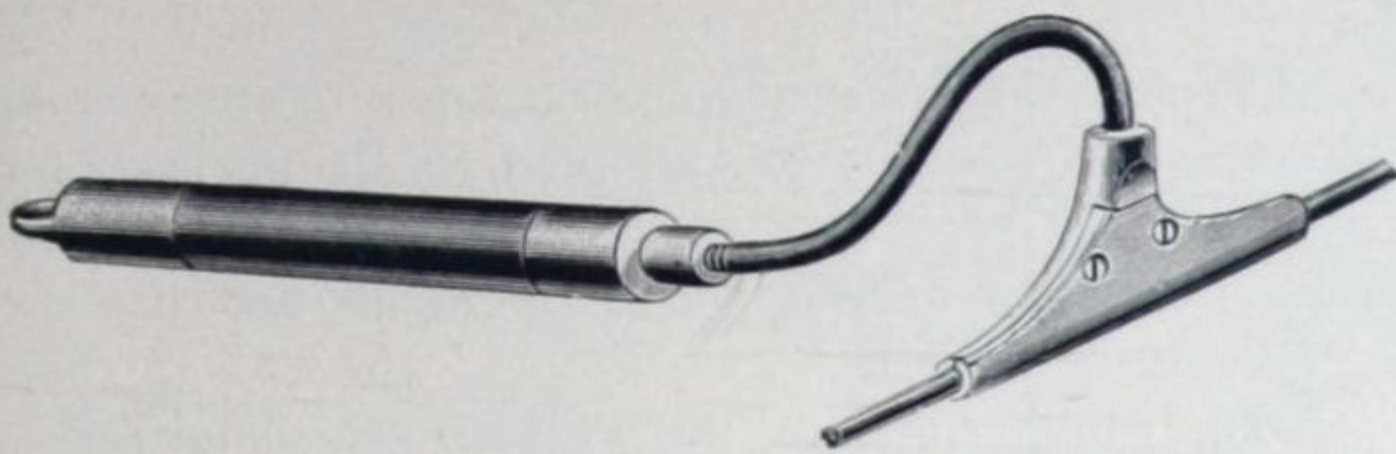
Our bonds are made of galvanized iron, experience shows that copper bonds are in time rendered useless by corrosion.

No. R 15, 24 inch long	$\frac{1}{4}$ inch rivet,	-----	Each \$.12
" " 16, 24 "	" $\frac{5}{16}$ " "	-----	" .14
" " 17, 30 "	" $\frac{1}{4}$ " "	-----	" .14
" " 18, 30 "	" $\frac{5}{16}$ " " (standard size)	-----	" .15
" " 19, 6 feet	rivet one end only, $\frac{1}{4}$ inch rivet,	-----	" .14
" " 20, 6 "	" " " " $\frac{5}{16}$ " "	-----	" .15

Cross Connecting Bonds.

No. R 21, 2-24 inch	cross connected by a 6 foot bond	$\frac{1}{4}$ inch rivet,	-----	Each \$.38
" R 22, 2-24 "	" " " " 6 " "	" $\frac{5}{16}$ " "	-----	" .45
" R 23, 2-30 "	" " " " 6 " "	" $\frac{1}{4}$ " "	-----	" .40
" R 24, 2-30 "	" " " " 6 " "	" $\frac{5}{16}$ " "	-----	" .50

Railroad Supplies.



No. 12 E. E. & S. Pull Off or Curve Bracket.

Price, No. 12.....\$0.75



Trolley Wire Splicing Clamp, used with No. 8 Insulator. Clamping of Plates secures the Wire.

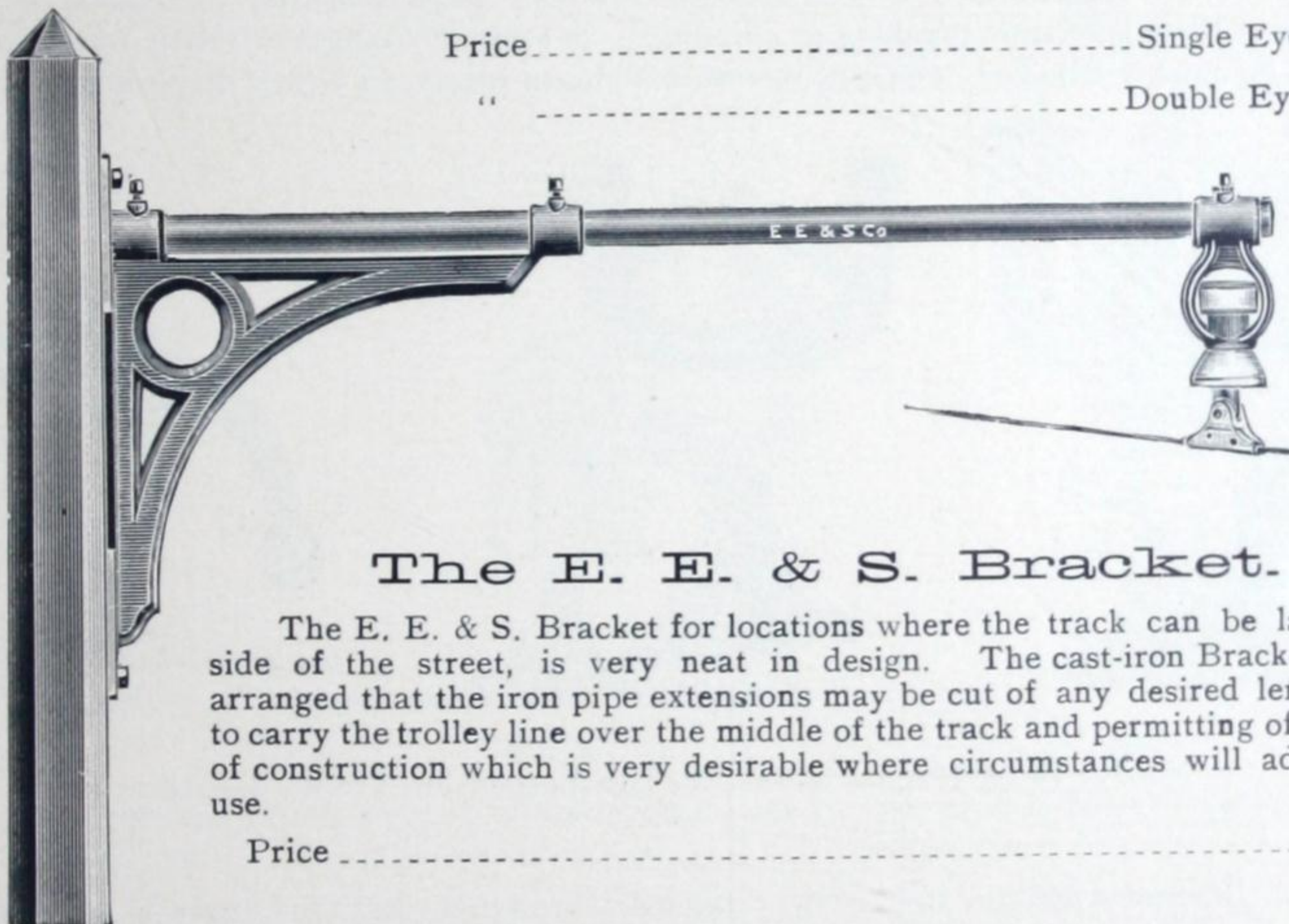
Price.....\$0.90



Strain Plate.

No solder necessary with these plates. The screws clamp the wire tight.

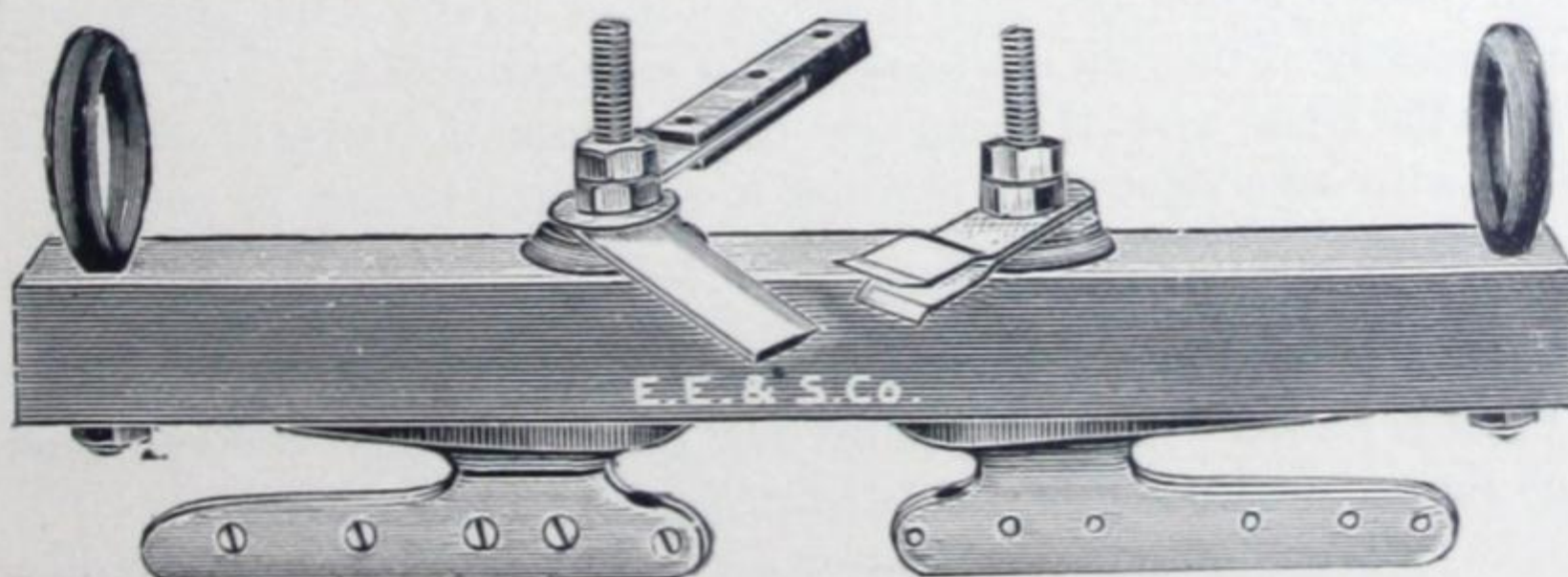
Price.....Single Eye, \$1.75
 ".....Double Eye, 1.85



The E. E. & S. Bracket.

The E. E. & S. Bracket for locations where the track can be laid at one side of the street, is very neat in design. The cast-iron Bracket being so arranged that the iron pipe extensions may be cut of any desired length so as to carry the trolley line over the middle of the track and permitting of a method of construction which is very desirable where circumstances will admit of its use.

Price.....\$5.00



Circuit Breaker and Switch.

Price.....\$3.00

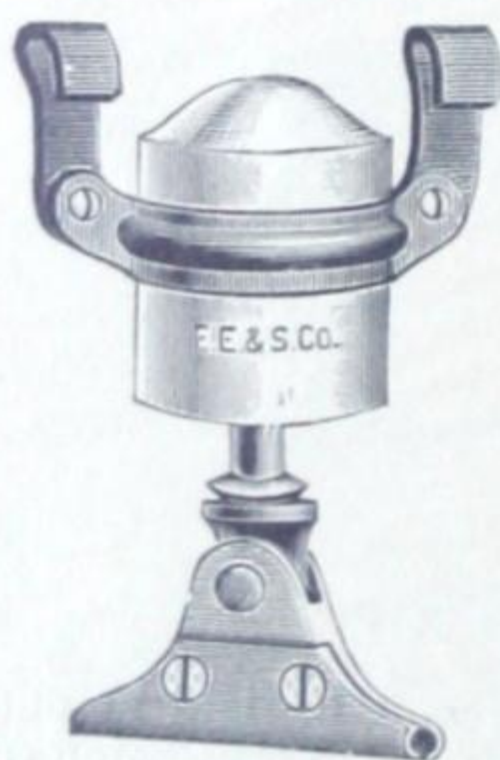
Trolley Wire Insulators.

We illustrate herewith the E. E. & S. forms of Trolley Insulators adapted for use with either cross suspension or bracket line, which are of new design and particularly well adapted for the purposes for which they are intended.

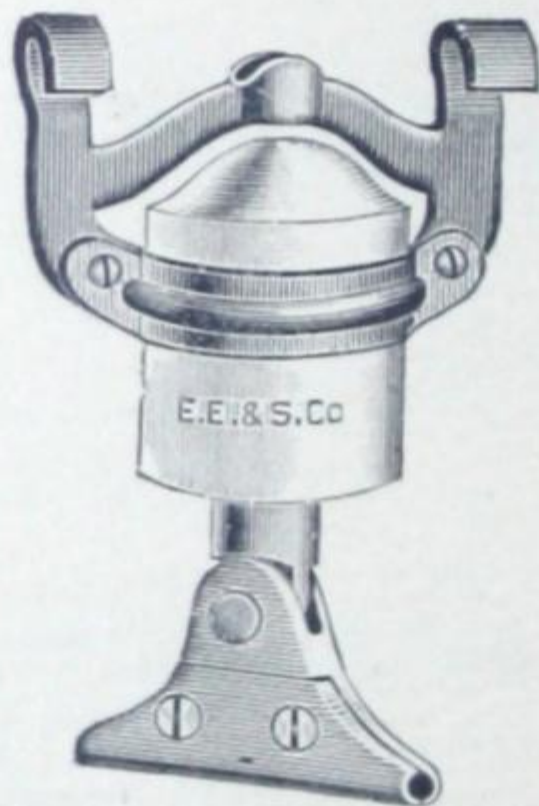
The Insulator itself is composed of Syracuse porcelain which is peculiarly tough and has the highest tensile strength obtainable in this class of goods.

The Hanger is an Aluminum Bronze Casting which fits into the Porcelain Insulator and is clamped firmly around it by two screws which hold the two parts of the Hanger together. The Insulator is thus easily adjustable to the wire and after being hooked over the span or suspension wire the points are easily bent down with a pair of pliers so as to clamp the Insulators in place.

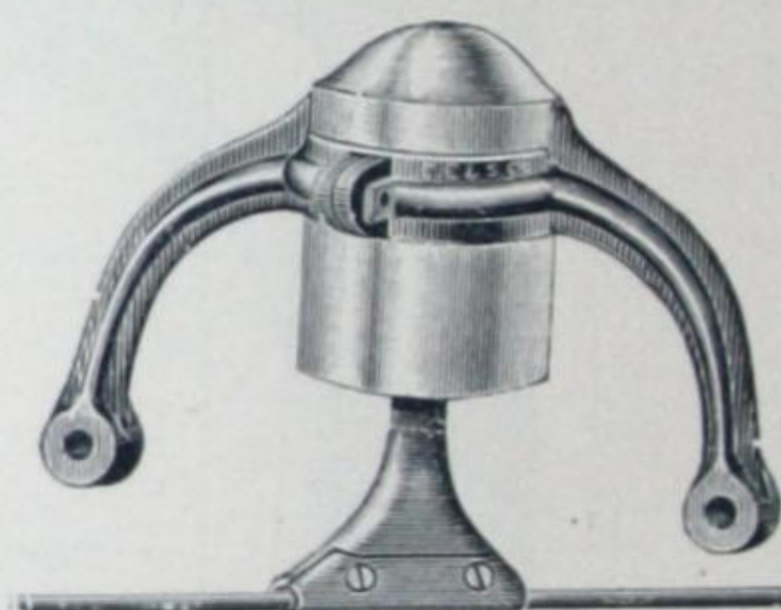
The Stud running up into the end of the Insulator from the bottom side, to which is hinged the ear which clamps the Trolley Wire is enlarged on the upper end and the interior of the porcelain so shaped that a quarter turn locks the Stud into the Insulator. The space around the Stud is then filled with lead, which fastens it permanently. The Ear, as the illustration shows, is hinged at the bottom so as to allow for the "creeping" of the wire, which invariably occurs, to take place without breaking off the Stud, which would be liable to occur if the hinged joint were omitted. It is a well known fact that glass and porcelain are the best insulators obtainable, but the use of glass is hardly safe on account of its being so brittle. The porcelain, such as is used in this insulator, however, has 20 times the tensile strength of glass, and will stand the worst kind of hard usage, no complaint as yet having been made of these insulators breaking or chipping. In cases of changes or repair work these insulators could be quickly adjusted in case of the other styles of insulators which they replace.



No. 1.



No. 2.



No. 3.

No. 1. Illustrates our Standard Cross Suspension Trolley Insulator.

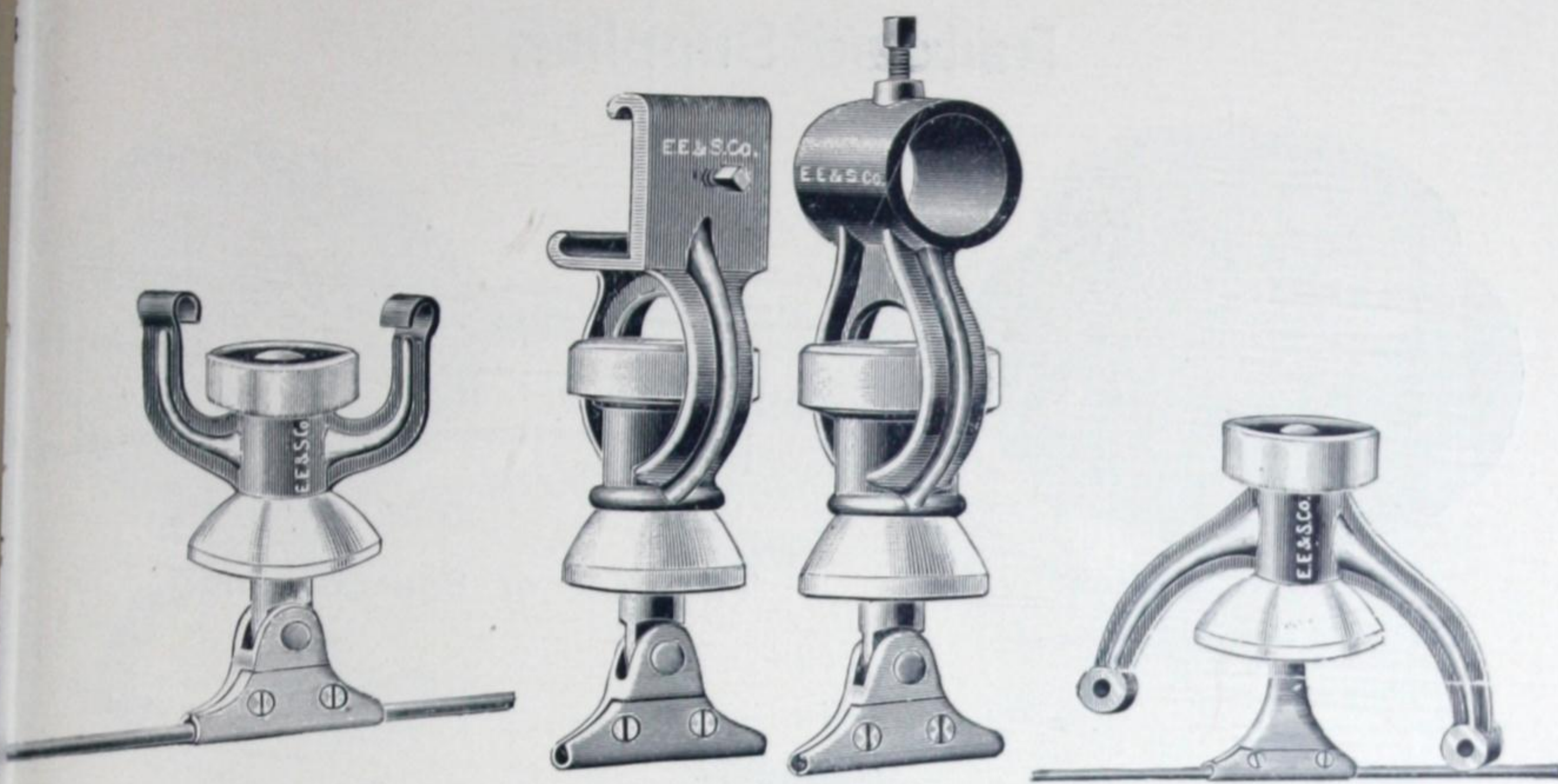
Price, No. 1.....\$1.00

No. 2. Illustrates another style of the same insulator except that the hanger is so arranged that when once hooked in place it is clamped into position so that it cannot slip sideways on the span wire, which obviates the necessity of turning the hooks down with the pliers. No. 1, however, is handier for repair work where the span wire is stretched tight across the street, whereas with No. 2 it is necessary to have the wire somewhat slack in order to adjust the hanger in place.

Price, No. 2.....\$1.00

No. 3. Illustrates a center curve insulator which is practically the same as the other two insulators except that there is no joint between the ear and the stud, which is made unnecessary from the fact that the pull on the span wire comes directly opposite the trolley wire.

Price, No. 3.....\$1.25

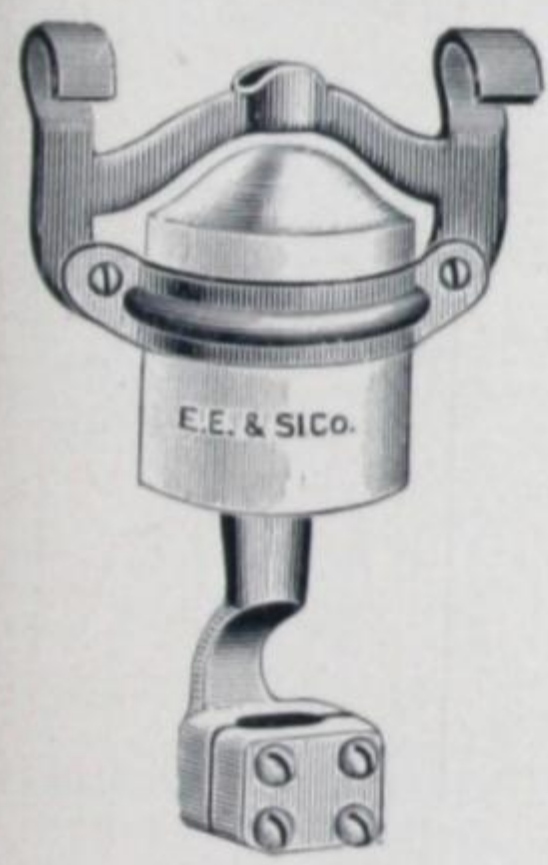


No. 4.

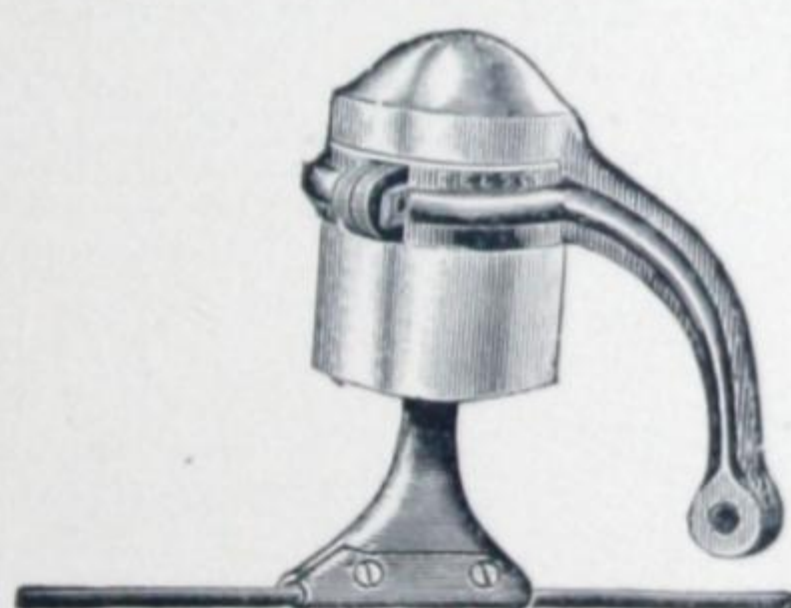
No. 6.

No. 7.

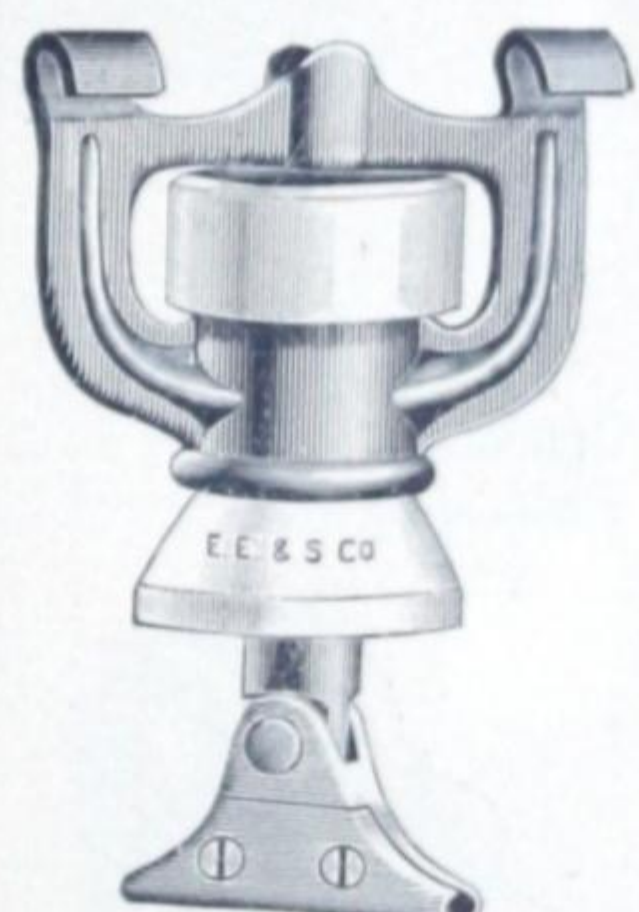
No. 5.



No. 8.



No. 9.



No. 10.

No. 4. Trolley Insulator—This style of Insulator containing two pieces as in the Standard, and is a little heavier.

No. 4	\$1.00
-------	-------	--------

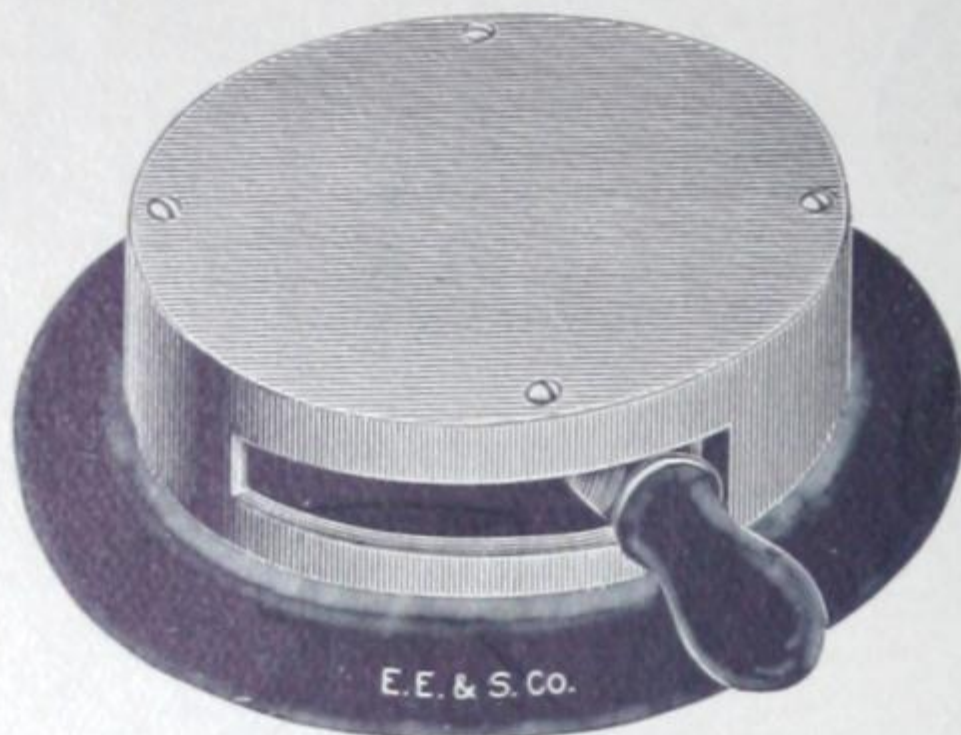
No. 5. Center Curve Insulator.	No. 6. Insulator for Iron Pipe Bracket.	No. 7. Insulator for Single Iron Bracket.
--------------------------------	---	---

No. 5	.....	\$1.25
" 6	.....	1.25
" 7	.....	1.25

No. 8. Insulator for supporting splicing clamp.	No. 9. Pull off Insulator.	No. 10. Trolley Insulator with strand wire binding device.
---	----------------------------	--

No. 8	.....	\$1.25
" 9	.....	1.00
" 10	.....	1.00

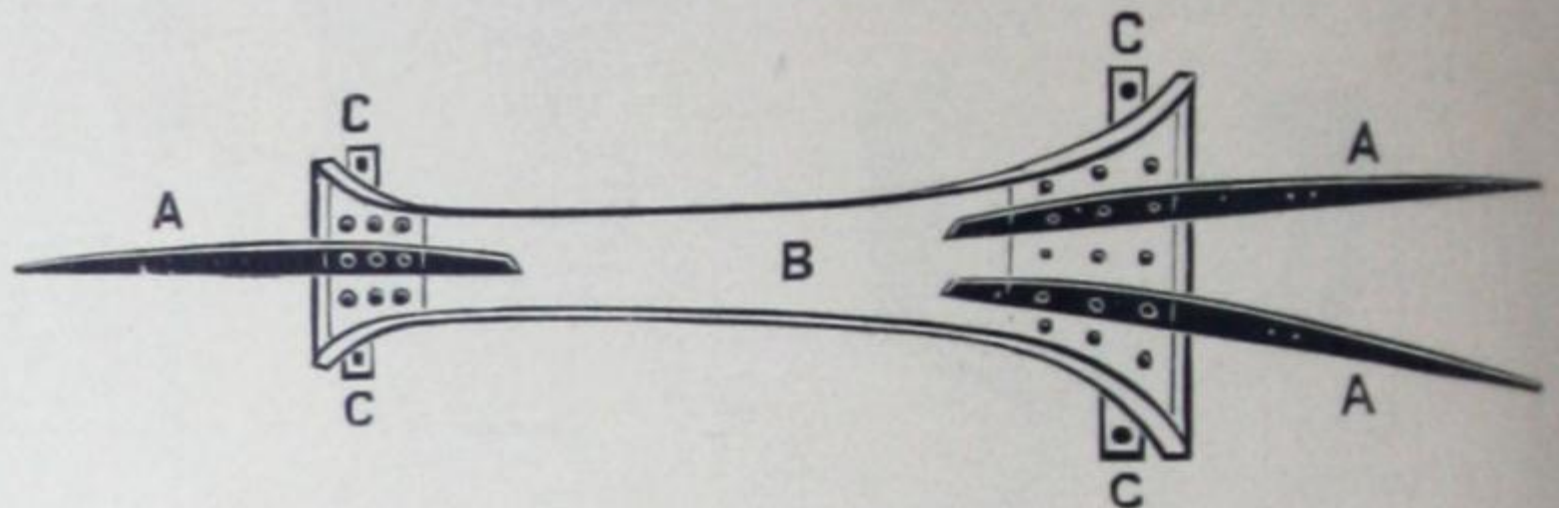
Railroad Supplies.



Headlight Switch.

For use on Headlight Circuit of Motor Cars.

Price \$2.00



Turn Off or Spur Switch.

Price \$5.00



These fuse links are made of the best material obtainable and are sure to suit.
Made in all amperes.

PRICE LIST.

0— 25 Amperes	.....	\$0.18
25—300 "	.....	.21
300—375 "	.....	.24
400—500 "	.....	.28



Pole Ratchet.

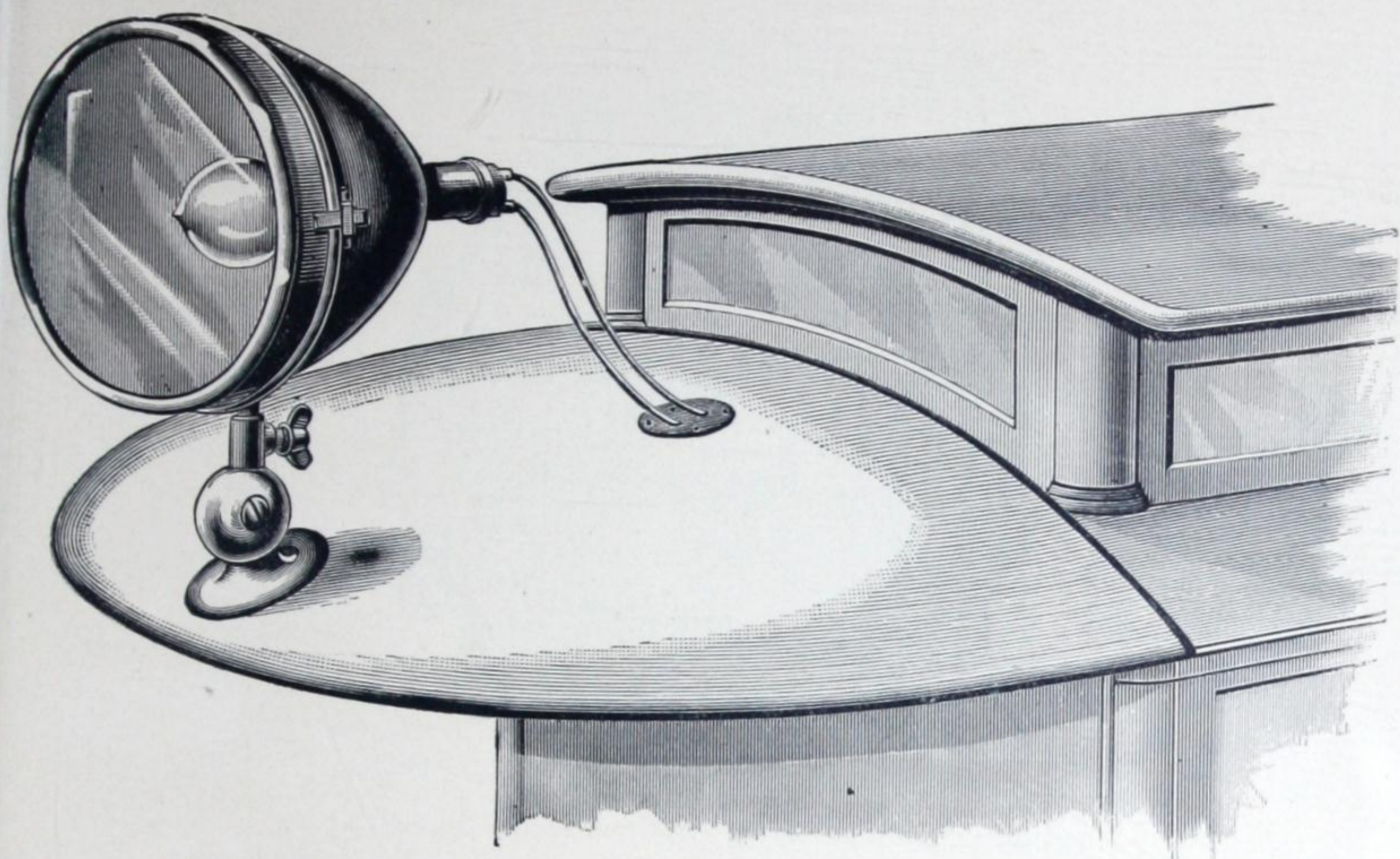
Price, 50c.



Span Wire Eye Bolt.

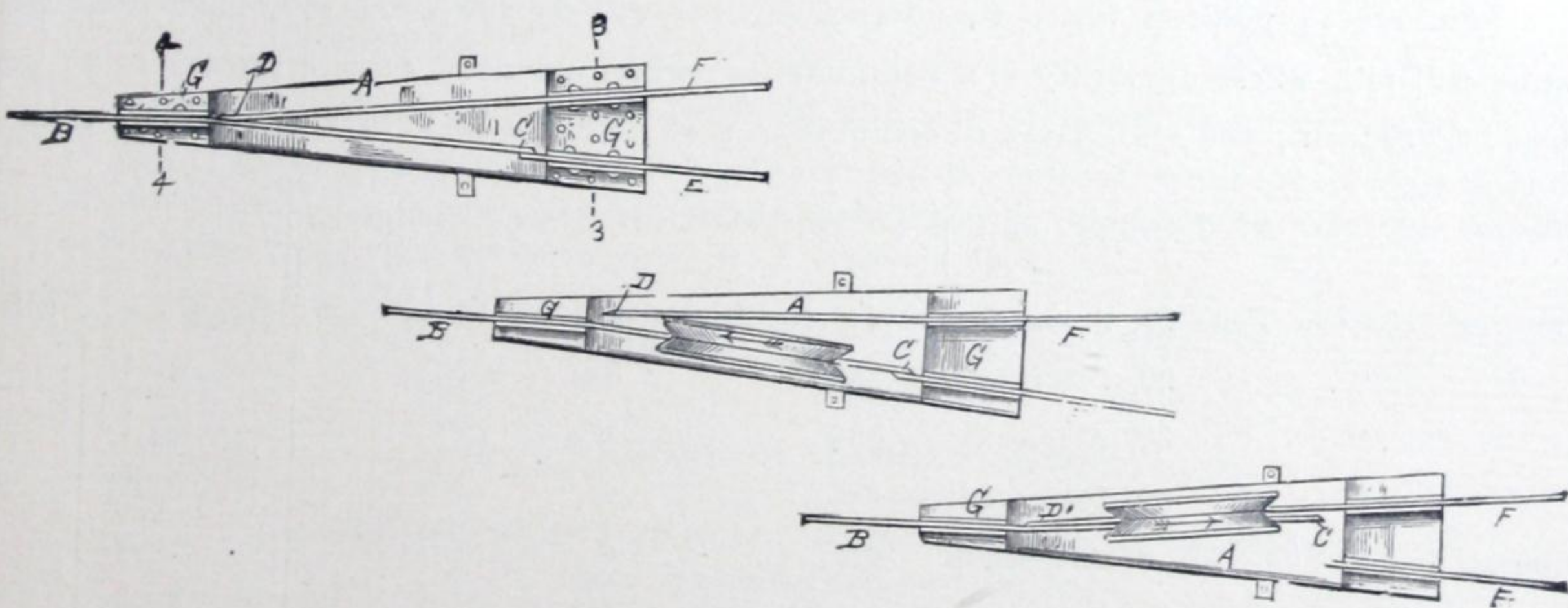
Price.....	10 in.,	\$0.09
".....	12 "	.10
".....	14 "	.11
".....	16 "	.12

Railroad Supplies.



Electric Street Car Mead Light.

8 inch, with Switch Complete, (without Lamp),	-----	\$ 8.80
10 " " " " " " " "	-----	11.15

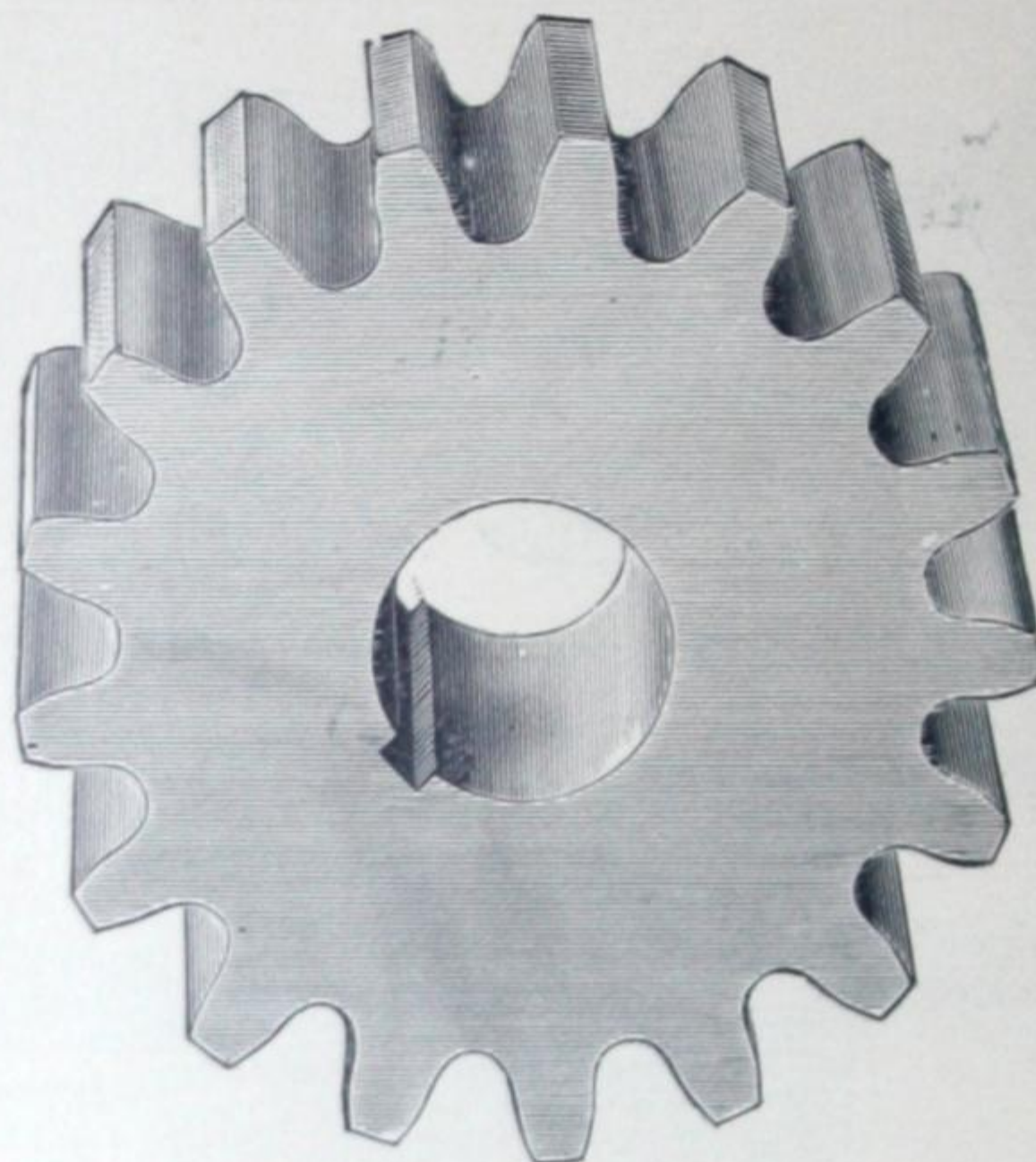


Overhead Switch.

Cuts show method of operation. The Switch adapts itself to the direction the Trolley is taking.

Price,-----\$ 8.00

Rawhide Gears.



Noiseless and Durable Gears.

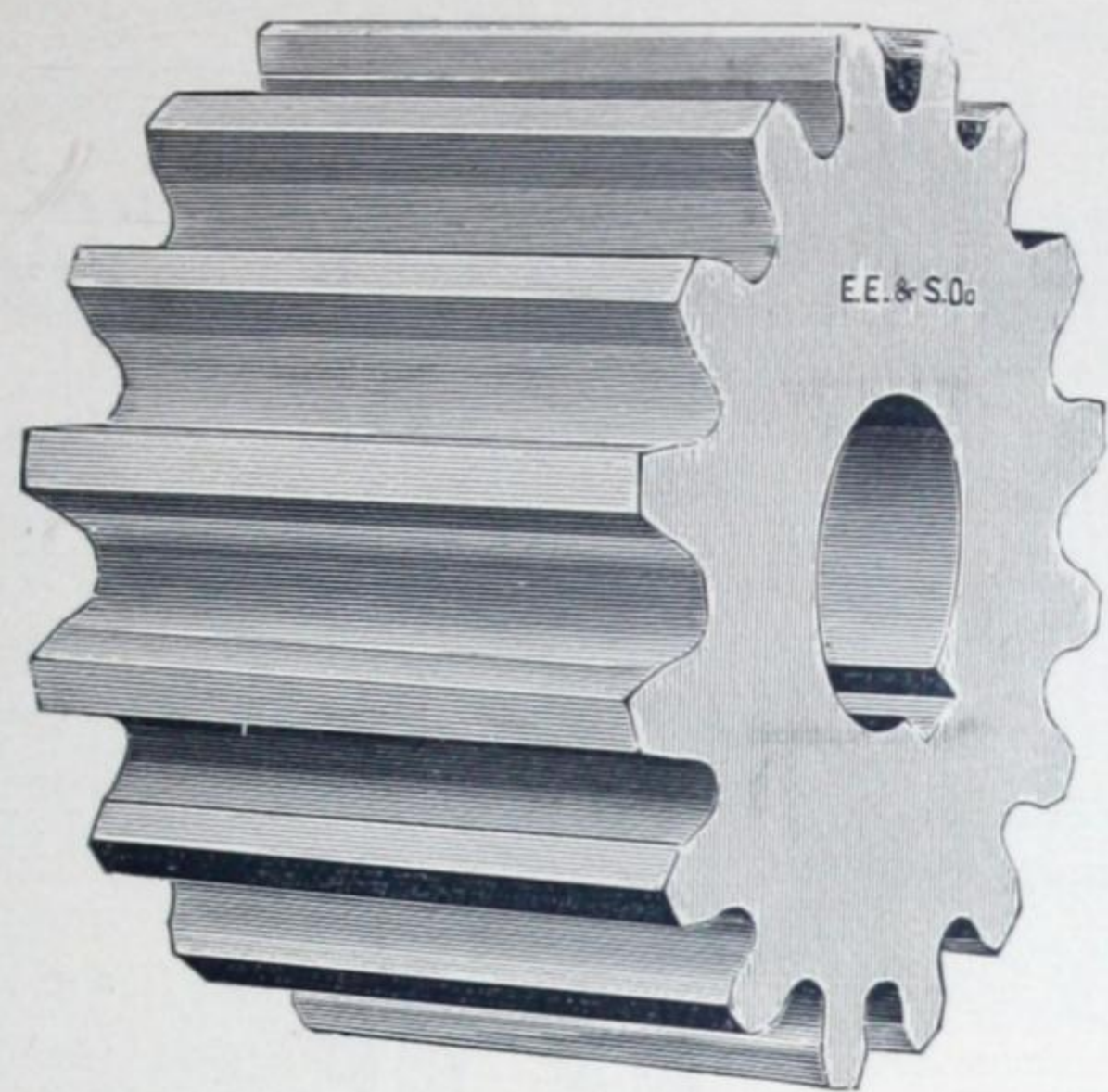
If you are in position where this Rawhide Gear will do you good, where the noiseless feature will tell, where durability is a consideration, where no need of a lubricant is to be taken into account, you will certainly equip your road with the New Process Rawhide Gear.

All Rawhide, or Can be Furnished with Steel Flanges.

Thomson-Houston Type 20, Armature	4 $\frac{3}{4}$ in. Diam.,	4 in. Face, Complete,	\$ 9.90 Each
" " " 20, Intermediate	5 $\frac{1}{4}$ " " 3 $\frac{3}{4}$ " "	" " " "	- 11.11 "
" " " 30, Armature	5 $\frac{2}{3}$ " " 4 " "	" " " "	- 13.70 "
" " " 30, Intermediate	6 $\frac{1}{3}$ " " 4 " "	" " " "	- 14.28 "
Sprague System No. 6, Armature	4 $\frac{3}{4}$ " " 4 " "	" " " "	- 9.90 "
" " " 6, Intermediate	6 " " 4 " "	" " " "	- 14.92 "
Short " Armature	5 $\frac{2}{3}$ " " 4 " "	" " " "	- 13.70 "
" " Intermediate	6 $\frac{1}{2}$ " " 4 " "	" " " "	- 18.02 "

Prices on Special Sizes Sent Upon Application.

R. R. Motor Gears.



Rawhide Gears.

Noiseless and durable. Stock thoroughly seasoned.

	INCH.		INCH.	PRICE
T. H. Type, 20 Armature	4 ³ / ₄ Dia.	4	Face	-----
" " 20 Intermediate	5 ¹ / ₄ "	3 ³ / ₄	"	-----
" " 30 Armature	5 ² / ₃ "	4	"	-----
" " 30 Intermediate	6 ¹ / ₃ "	4	"	-----
Sprague System, No. 6 Armature	4 ³ / ₄ "	4	"	-----
" " " 6 Intermediate	6 "	4	"	-----
Short System Armature	5 ² / ₃ "	4	"	-----
" " Intermediate	6 ² / ₃ "	4	"	-----

All rawhide gears can be furnished with steel or aluminum bronze flanges.

If you are in position where this Rawhide gear will do you good, where the noiseless feature will tell, where durability is a consideration, where no need of a lubricant is to be taken into account, you will certainly equip your road with the E. E. S. Rawhide Gear.

Any Special Size Made To Order.

Aluminum Bronze Gears.

Nothing but the very best of composition enters into these gears.
 Made in all sizes and for all systems.

These gears wear better and run quieter than steel. The most satisfactory arrangement for double reduction motor is to use the rawhide pinion, described on the preceding page, on the armature and the aluminum bronze gears on the intermediate shaft, resulting in less wear on the gears, on account of the better lubricating surfaces presented.

Try Our Gears and You Will Use no Others.

Baker "Common Sense" Oil Filter.

-- THE --
"Common Sense"
 IS THE
ONLY OIL FILTER

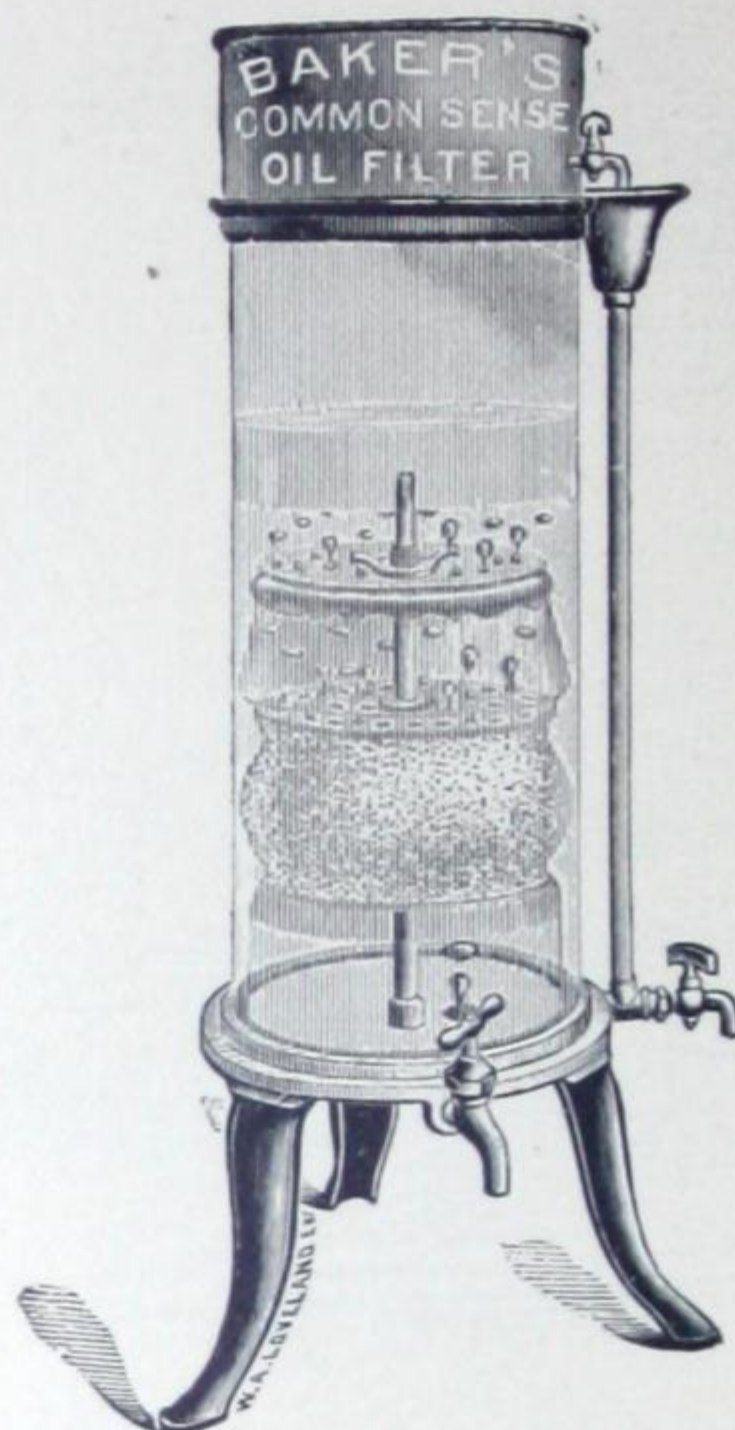
That has the whole operation visible.

That has filtering material in a removable, transparent case, entirely submerged in water.

That will leave nothing in the oil settle.

That will do perfect work.

THE FILTER IS PATENT.



-- THE --
"Common Sense"
OIL FILTER

Reverses the gravity of the oil, which has a gentle tendency to rise, while the impurities tend to settle. While in this condition the oil

Passes through the Filtering Material which, by capillary attraction and straining, makes a perfect and complete separation. The heavier particles settle in the water before reaching filtering material.

THE "PROCESS" IS PATENTED.

No. 1.	Will filter from $\frac{1}{2}$ to $1\frac{1}{2}$ gallons per day	Price, \$30.00
No. 2.	" " 2 to 8 " "	" 40.00

BROCKPORT, N. Y., December 5, 1889.

DEAR SIR—Your "Common Sense" Oil Filter has given us the best of satisfaction, and we can truly say that, during the year we have been using it, it has saved many times its price in oil.

Yours truly,

BROCKPORT ELECTRIC CO.

It Eclipses His Expectations and He Does Not Need the Other.

LIVINGSTON, MONT., March 18, 1890.

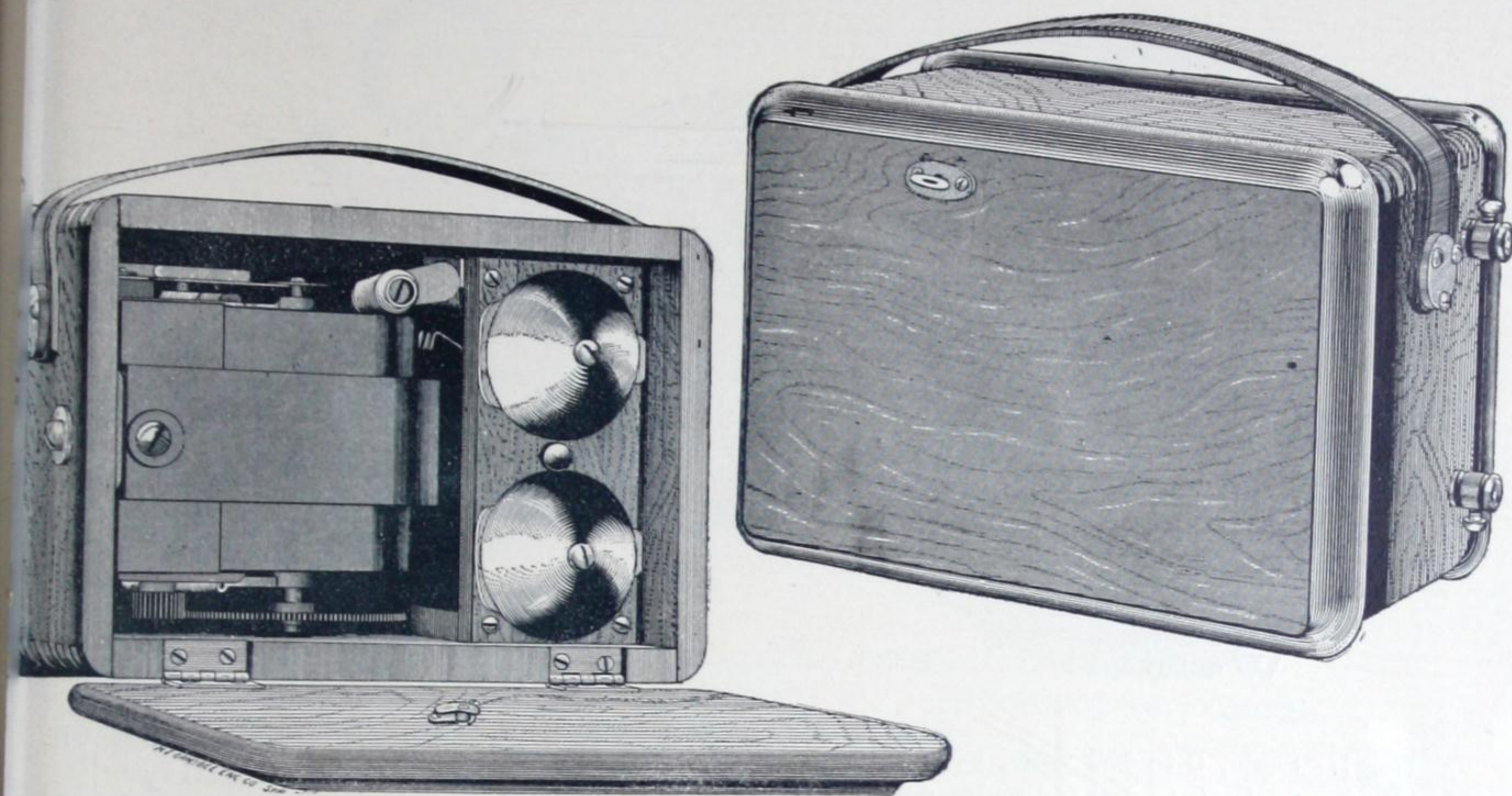
DEAR SIR—Enclosed find exchange in payment of two "Common Sense" Oil Filters, the last ordered by wire a few days since. I rather regret this last order, for I find that one filter will do all our work, and so well that another is really unnecessary. I have had another make of filter in use, but in spite of all we could do it would not return our oil as clear as we required it to be, and in consequence we had all the cans, pails, etc., we could muster filled with oil. I had not tested your filter for the amount of work it would do, as I wished to reserve it for the dynamos exclusively. I thought another was needed, if I wanted to keep engine oil separate. But such separation is unnecessary. Your filter seems to return all oil fed to it in an exceedingly pure condition. I have watched its action very carefully, and have taken many bottle samples, setting them aside for settlement and sediment; but have found nothing of the kind that the eye could detect.

I must say it is thoroughly "Common Sense" in principle, and I congratulate you on having as neat and effective an article in hand.

Very truly yours,

F. A. ROSS,
 Superintendent Livingston Electric Light Co.

Magneto Testing Bells, Etc.



PRICE LIST

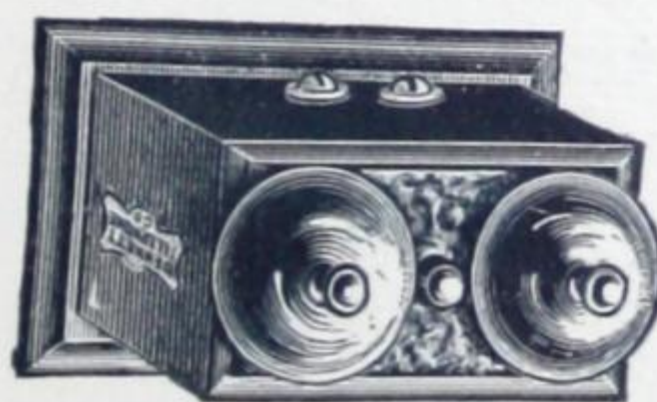
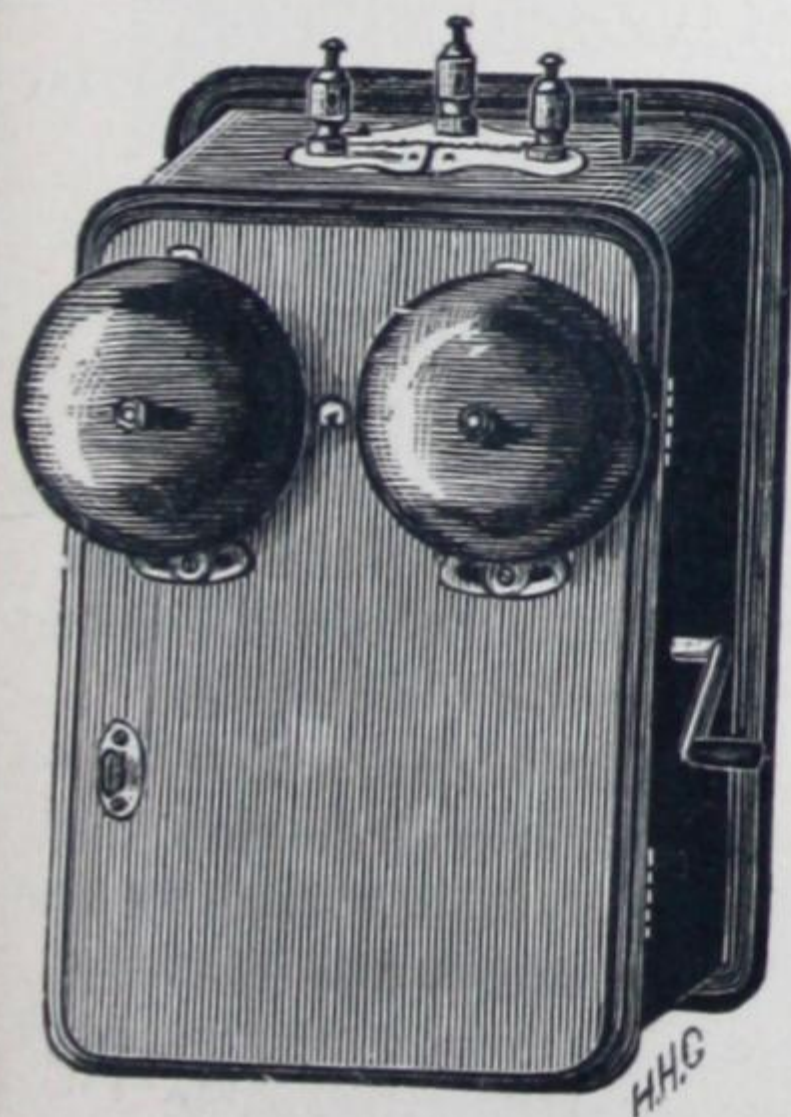
Portable Magneto Testing Bells.

Inside Gongs.

To ring through	15,000	Ohms	-----	\$ 7.50
"	25,000	"	-----	10.00
"	35,000	"	-----	12.50
"	50,000	"	-----	15.00

Magneto Call Bells.

Poney	-----	\$5.00
Standard (10,000 Ohms).	-----	7.00



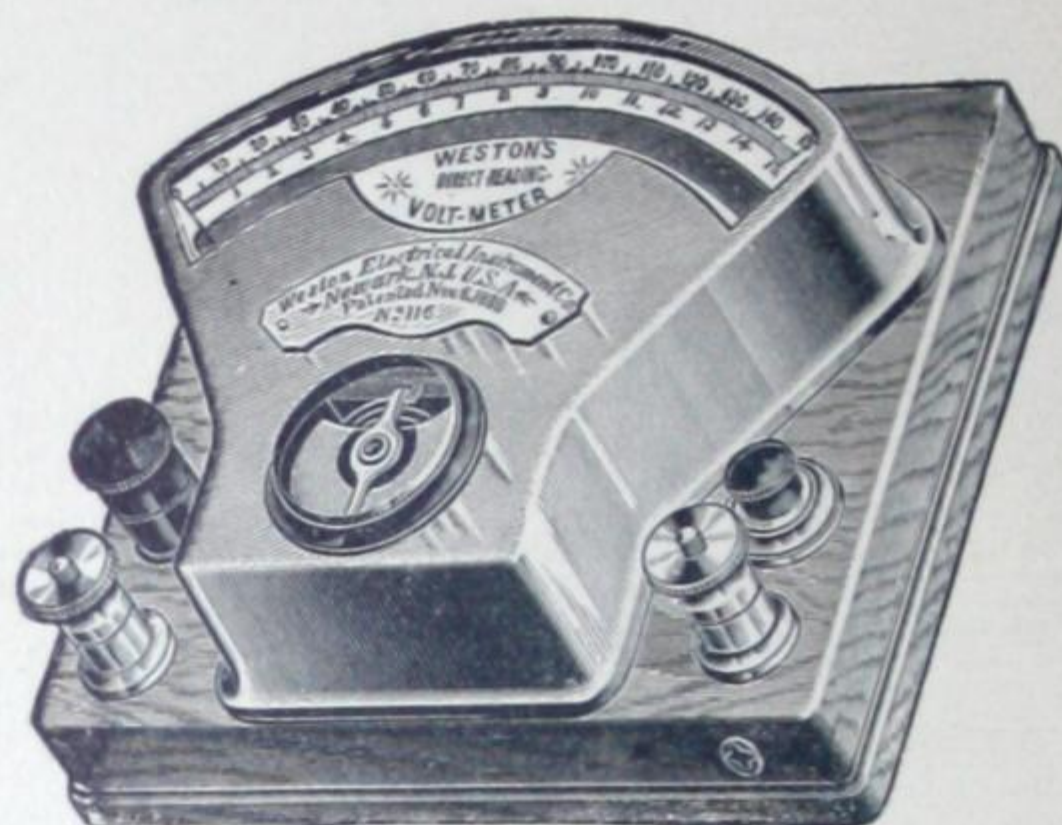
Magneto Extension Bells.

$2\frac{1}{4}$	-----	\$3.00
$3\frac{1}{4}$	-----	3.50
4	-----	4.00

Magneto Generators.

Hand Generator	-----	\$ 5.00
Power	-----	25.00

Weston Direct Reading Volt and Am-Meter.



Weston Direct Reading Volt Meter.

No. 1.	Scale, 0 to 150 volts, by single-volt divisions, readable to tenths, -----	\$55.00
" 2.	Scale, 0 to 150 volts, by single-volt divisions, readable to tenths. Contact key and calibrating coil,-----	60.00
" 3.	Scale, 0 to 150 volts, and 0 to 5 volts. Scale of double values with a ratio of 30. Each division on upper scale-values is one volt, readable to tenths; each division on lower scale-values, $\frac{1}{30}$ of a volt, readable to $\frac{1}{300}$. Contact key,---	75.00
" 5.	Scale, 0 to 300 volts, by two-volt divisions, readable to $\frac{1}{3}$ volt. Contact key and calibrating coil,-----	65.00
" 6.	Scale, 0 to 450 volts, by three-volt divisions, readable to $\frac{1}{3}$ volt. Contact key and calibrating coil,-----	70.00
" 7.	Scale, 0 to 600 volts, by five-volt divisions, readable to $\frac{1}{2}$ volt,-----	65.00
" 8.	Scale, 0 to 600 volts, by five-volt divisions, readable to $\frac{1}{2}$ volt. Contact key and calibrating coil,-----	70.00

Weston Direct Reading Am-meter.

No. 1.	Five-ampère scale. Single scale divisions, $\frac{1}{20}$ of an ampère, readable to $\frac{1}{200}$ of an ampère,-----	\$65.00
" 2.	Fifteen-ampère scale. Single scale divisions, $\frac{1}{10}$ of an ampère, readable to $\frac{1}{100}$ of an ampère,-----	65.00
" 3.	Twenty-five-ampère scale. Single scale divisions, $\frac{1}{4}$ of an ampère, readable to $\frac{1}{40}$ of an ampère,-----	65.00
" 4.	Fifty-ampère scale. Single scale divisions, $\frac{1}{2}$ of an ampère, readable to $\frac{1}{20}$ of an ampère,-----	65.00
" 5.	One Hundred-ampère scale. Single scale divisions, 1 ampère, readable to $\frac{1}{10}$ of an ampère,-----	70.00
" 6.	One hundred and fifty-ampère scale. Single scale divisions, 1 ampère, readable to $\frac{1}{10}$ of an ampère,-----	75.00

Warner's Electric Gauges.

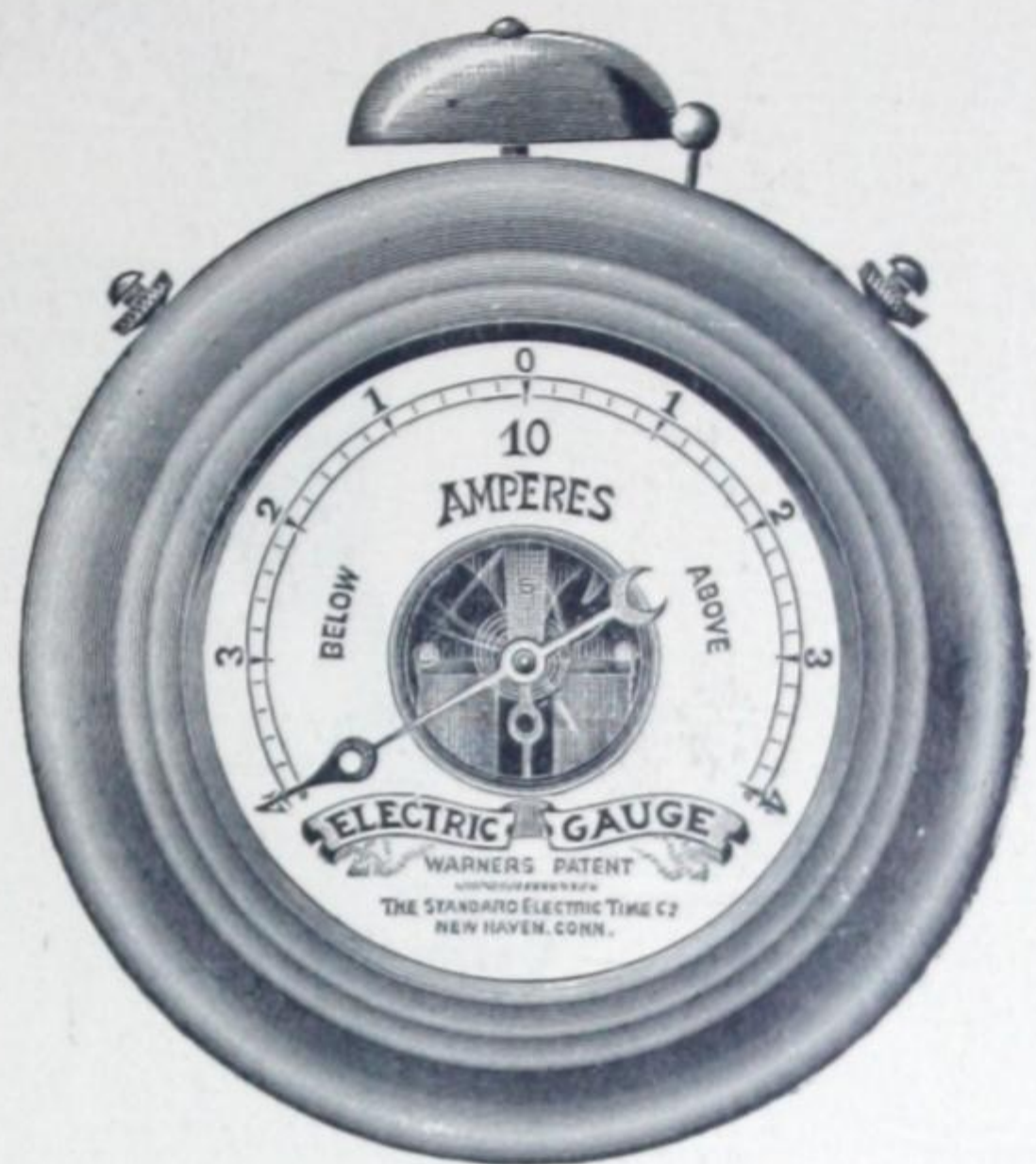


Pocket Size.

Dial, $1\frac{1}{4}$ Inches Diameter.

This Pocket Gauge is very convenient for Telephone Inspectors, etc. We also have the pocket size wound especially for testing the voltage of single cells of storage batteries. The reading is from one to three volts, readable to one-twentieth of a volt, and is very accurate.

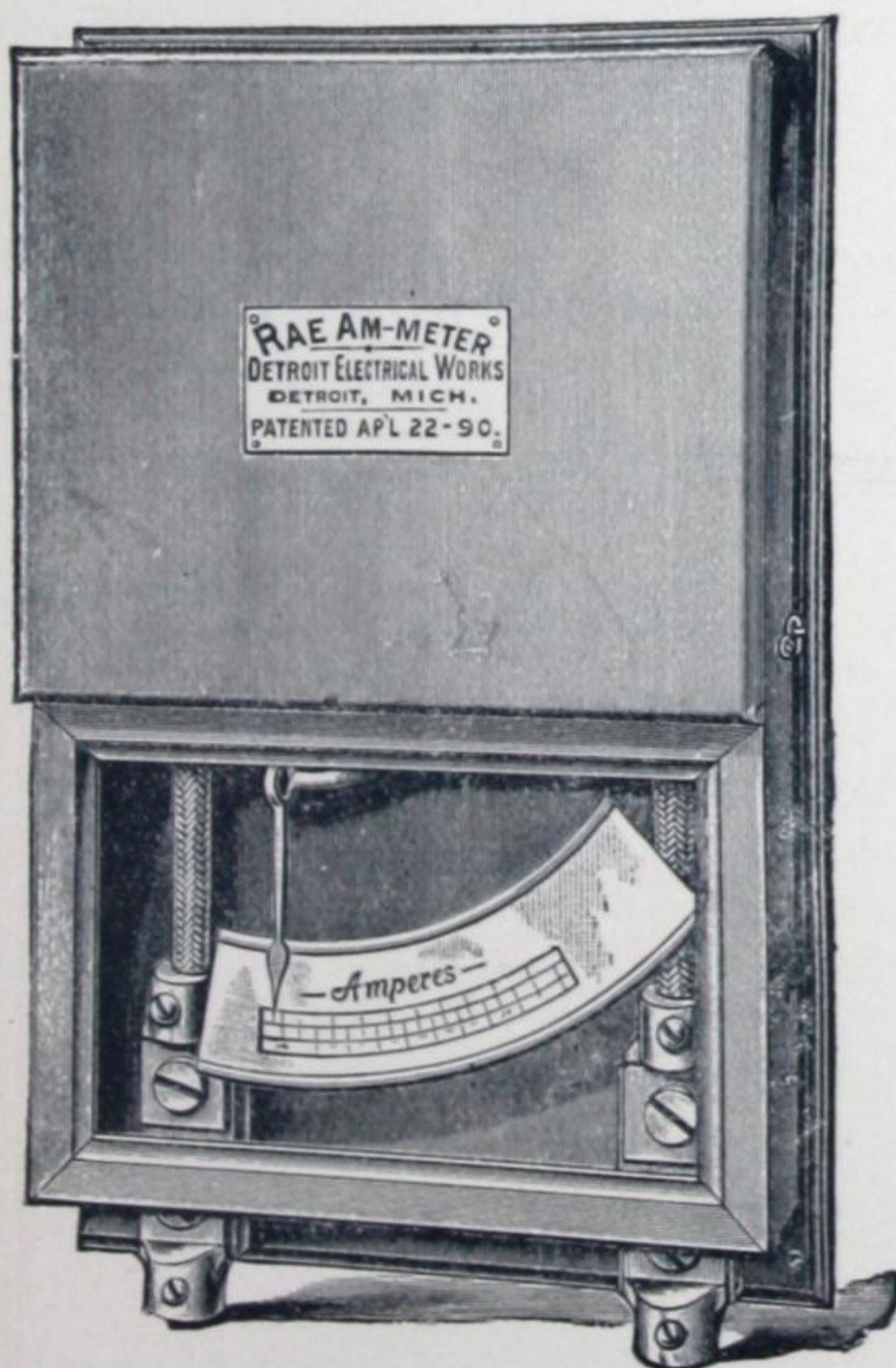
Price, ----- Each, \$12.00



Electric Light Gauge.

The Electric Light Gauge is of great value to all Electric Light Stations for showing the exact condition of the current on a circuit. The Electric Gauge resembles the Steam Gauge, and has a large and plain dial about six inches in diameter, which can be easily seen at a distance. The pointer stands at zero when the current is normal. These Gauges will be furnished for any current from one to fifty ampères. The figures "Above" and "Below" represent the variation in ampères above and below the normal current. These Gauges are furnished with an Alarm Attachment, if desired, which may be set to ring when the pointer is at any desired point "above" or "below" the normal condition, thus calling the engineer's attention when anything is wrong. The normal current should be stated that Gauge is required for, when ordering.

Price without Alarm, ----- \$30.00
 " with " ----- 35.00



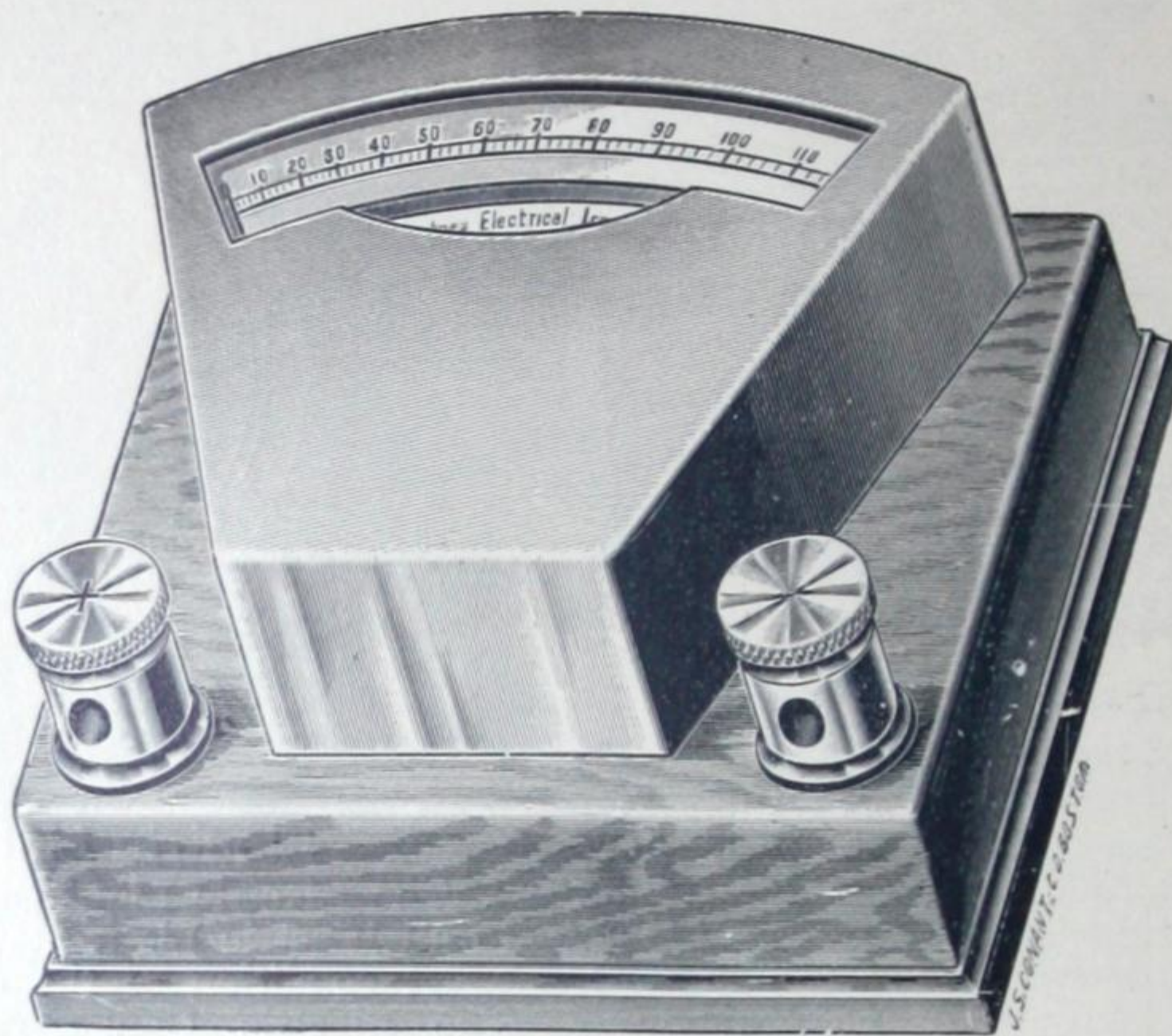
Rae Am-Metre.

FOR CENTRAL STATIONS.

Furnished Up to 300 Ampères' Capacity.

Price, 200 Ampère Capacity, ----- \$25.00

Whitney Direct Reading Volt-Meters and Am-Meters.



Volt-Meters.

SINGLE SCALE.

0— 10 Volt in $\frac{1}{10}$ Volt Divisions	-----	\$20.00
0—100 " 1 " "	-----	23.00
0—150 " 2 " "	-----	25.00

DOUBLE SCALE.

0— $7\frac{1}{2}$ Volts in $\frac{1}{10}$ Volt Divisions	-----	} \$30.00
0—150 " 2 " "	-----	

Ammeters.

0— 10 Amperes in $\frac{1}{10}$ Ampere Divisions	-----	\$21.00
0— 50 " $\frac{1}{2}$ " "	-----	24.00
0—150 " 2 " "	-----	30.00
0—250 " $2\frac{1}{2}$ " "	-----	35.00

NOTE—These instruments should be set up horizontally as they will not indicate correctly if placed vertically.



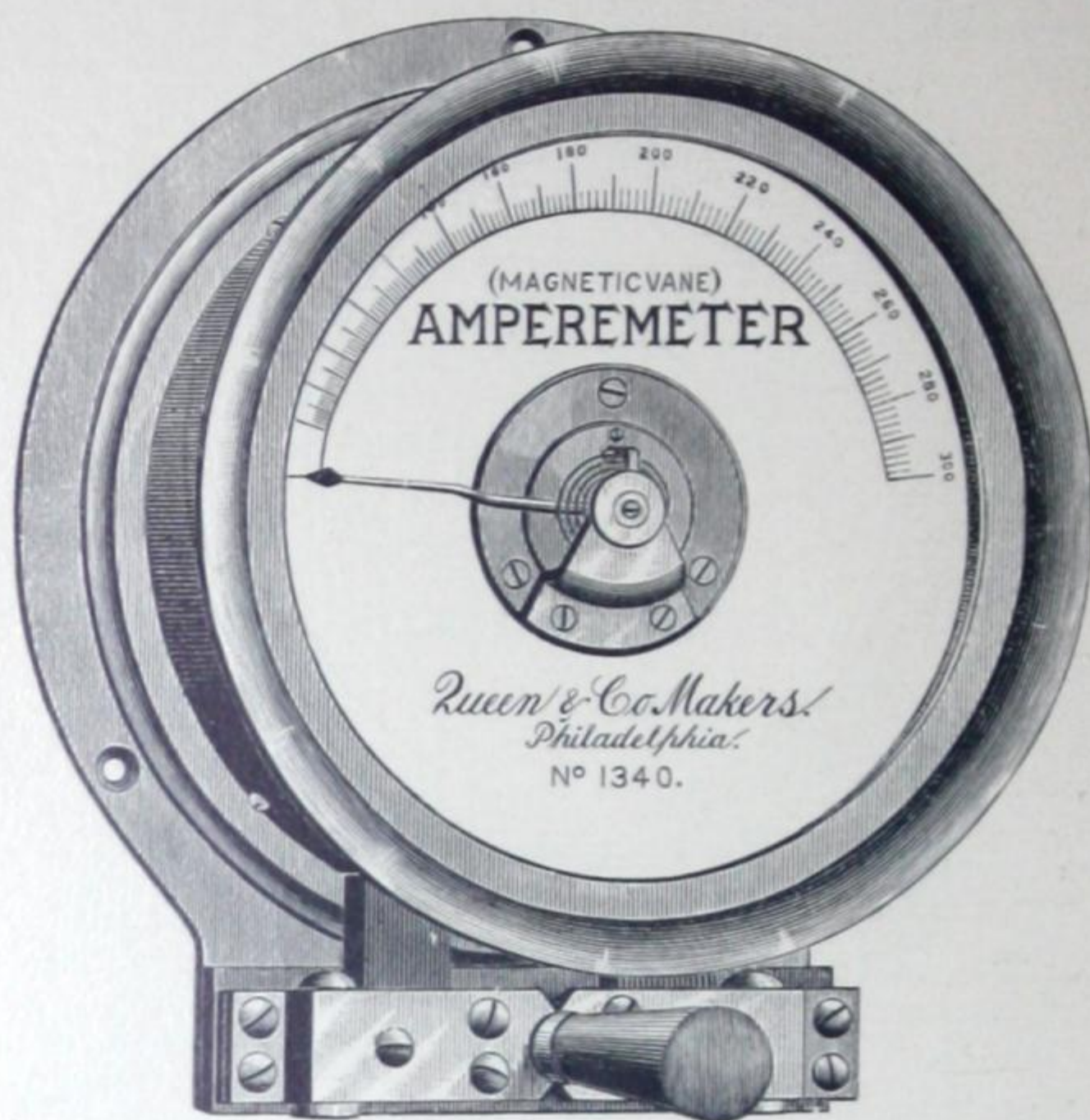
T 16 to T 21.

Magnetic Vane Am-Meters.

The Magnetic Vane Ammeter and Voltmeter has been designed to fulfill the requirements for commercial purposes, calling for a moderate priced instrument, strong in construction, reliable in results, with a wide, easily readable scale. These instruments have no permanent magnets, and are not easily affected by the presence of dynamos or heavy dynamo currents.

NET PRICE LIST.

T 16	Magnetic Vane Ammeter, mounted in finely lacquered brass case. Dial $4\frac{3}{4}$ inches across. Available range 1 to 10 Amperes.....	\$22.00
T 17	Magnetic Vane Ammeter, same size and finish as T 16. Available range 2 to 15 Amperes.....	22.00
T 18	Magnetic Vane Ammeter, same size and finish as T 16. Available range 3 to 25 Amperes.....	22.00
T 19	Magnetic Vane Ammeter, same size and finish as T 16. Available range 5 to 50 Amperes.....	22.00
T 20	Magnetic Vane Ammeter, same size and finish as T 16. Available range 7 to 75 Amperes.....	26.00
T 21	Magnetic Vane Ammeter, same size and finish as T 16. Available range 10 to 100 Amperes.....	26 00

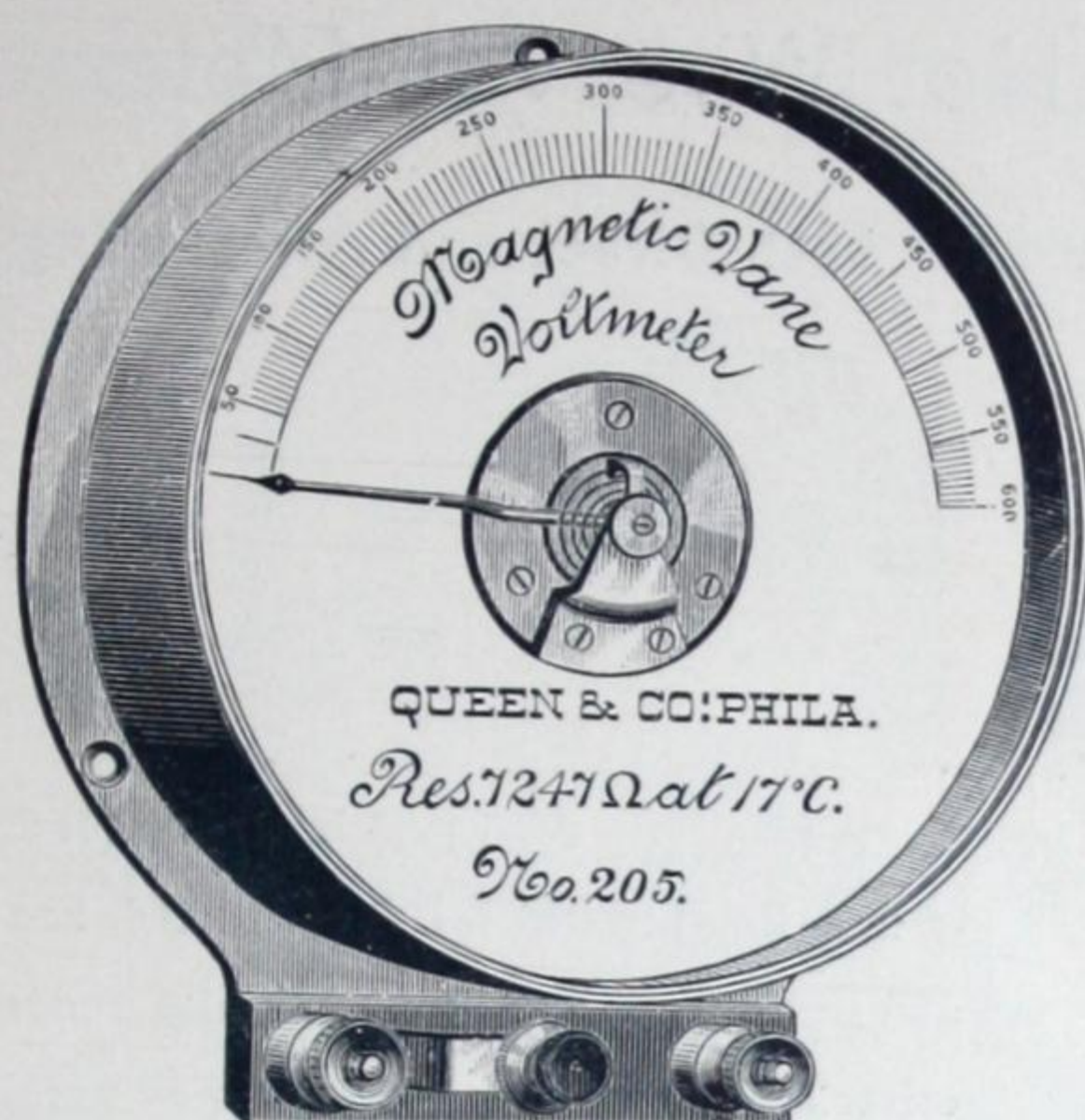


T 22—T 31.

Magnetic Vane Am-Meter.

NET PRICE LIST.

T 22	Magnetic Vane Ammeter, mounted in cast-iron case, neatly japanned in black, with special terminals for large wires, and cut-out plug, so that the ammeter may be left in circuit or not, as desired. Size of dial, 6 inches across. Available range 15 to 150 Amperes.....	\$42.00
T 23	Magnetic Vane Ammeter, similar to T 22, but with available range 20 to 200 Amperes.....	45.00
T 24	Magnetic Vane Ammeter, mounted in handsome brass case, finely finished. Same size as and otherwise like T 22. Available range 15 to 150 Amperes.....	50.00
T 25	Magnetic Vane Ammeter, similar to T 24, but with available range 20 to 200 Amperes.....	53.00
T 26	Magnetic Vane Central Station Ammeter, mounted in cast-iron case, neatly japanned in black. Heavy special terminals for large wires, and cut-out plug. Size of dial, 8 inches across. Available range 30 to 300 Amperes.....	56.00
T 27	Magnetic Vane Central Station Ammeter, same size and mounting as T 26. Available range 40 to 400 Amperes.....	60.00
T 28	Magnetic Vane Central Station Ammeter, same size and mounting as T 26. Available range 50 to 500 Amperes.....	64.00
T 29	Magnetic Vane Central Station Ammeter, same size as T 26, but mounted in handsome brass case, with special terminals and cut-out plug. Available range 30 to 300 Amp.....	72.00
T 30	Magnetic Vane Central Station Ammeter, similar to T 29. Available range 40 to 400 Amperes.....	76.00
T 31	Magnetic Vane Central Station Ammeter, similar to T 29. Available range 50 to 500 Amperes.....	80.00



T 32—37.

Magnetic Vane Volt-Meters.

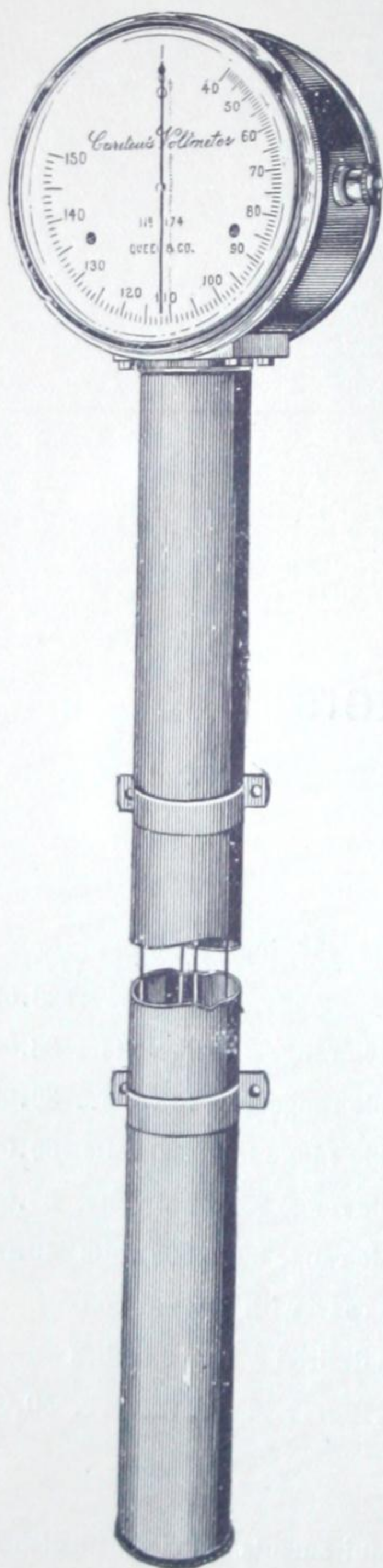
NET PRICE LIST.

T 32	Magnetic Vane Voltmeter, mounted in handsome brass case. Dial $4\frac{3}{4}$ inches across. Available range 2 to 15 volts.....	\$28.00
T 33	Magnetic Vane Voltmeter, same size and finish as T 32. Available range 3 to 25 volts..	28.00
T 34	Magnetic Vane Voltmeter, same size and finish as T 32. Available range 7 to 75 volts..	30.00
T 35	Magnetic Vane Voltmeter, same size and finish as T 32. Available range 15 to 130 volts.	30.00
T 36	Magnetic Vane Voltmeter, same size and style as T 32. Available range 25 to 225 volts.	35.00
T 37	Magnetic Vane Voltmeter, same size and style as T 32. Available range 30 to 300 volts.	40.00
T 38	Magnetic Vane Railway Voltmeter, mounted in handsome brass case with special contact key, so that the instrument may be left in circuit or not, as desired. Dial 6 inches across. Available range 60 to 600 volts.....	50.00

Ammeters and Voltmeters of any range made to meet special requirements. Prices furnished upon application.

Hot Wire Volt-Meter.

The Standard for both Direct and Alternating Curcuits.



A positively dead beat instrument indicating at once the voltage of the circuit to which it is connected, has no magnets or iron cores, and is not affected by the proximity of dynamos or heavy currents of electricity, is very accurate and has nothing about it to get out of order and seldom if ever requires recalibration.

NET PRICE LIST

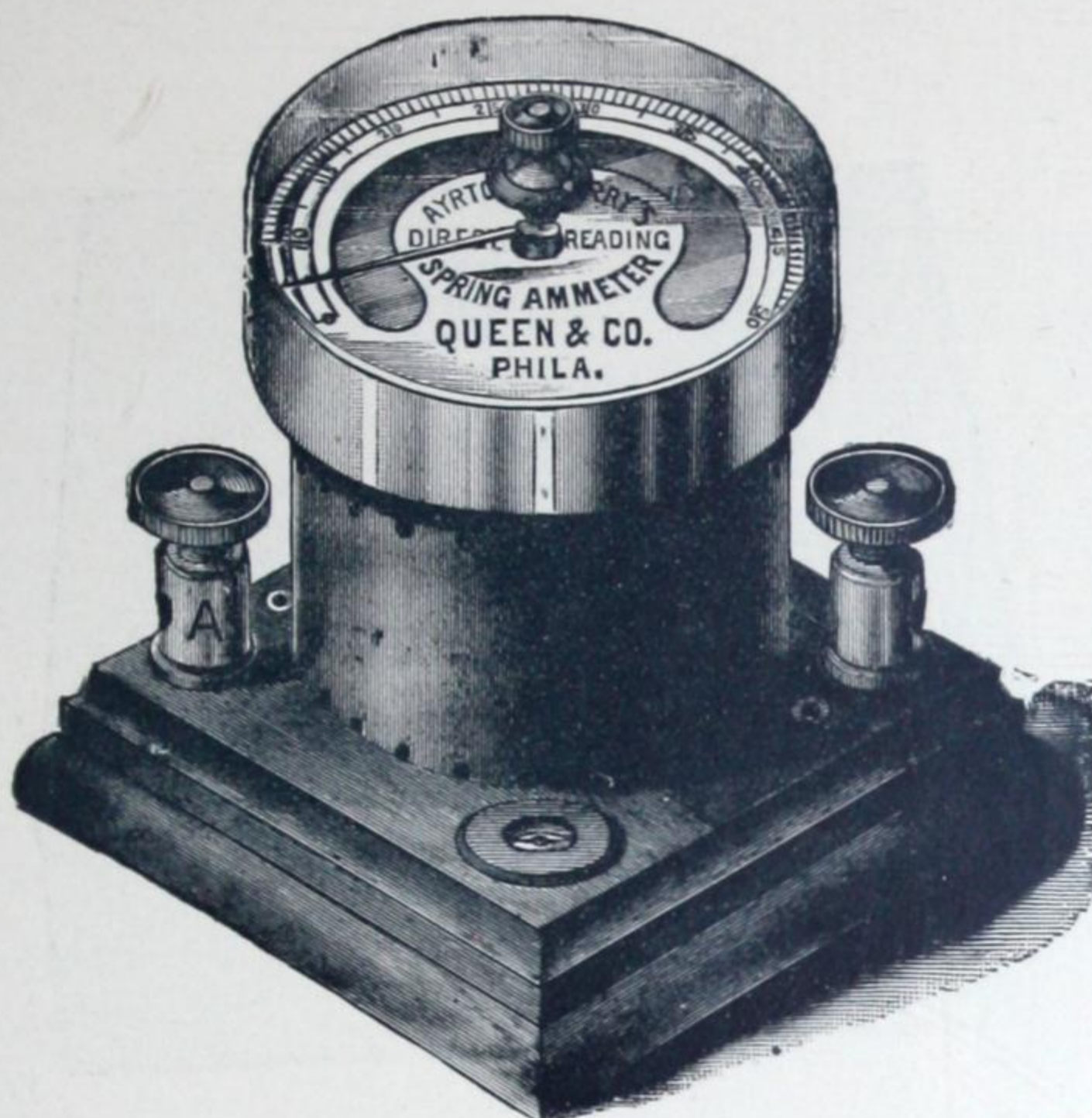
OF

Hot Wire Volt Meter.

No.		Vertical.	Horizontal.
T 58	Range 20 to 80 Volts, 5 inch Dial.....	\$65.00	\$70.00
T 59	" 30 " 120 " " "	65.00	70.00
T 60	" 40 " 150 " " "	75.00	80.00
T 61	" 20 " 80 " 8 "	75.00	80.00
T 62	" 30 " 120 " " "	75.00	80.00
T 63	" 40 " 150 " " "	85.00	90.00
T 63a	Resistance Tubes to increase range of Voltmeter, each.....		16.00
T 63b	Portable case with special connections for Horizontal type.....		5.00
	Restranging and recalibrating.....	\$6.00 to 8 00	

Instruments for Electrical Measurement.

(CONTINUED.)



Profs. Ayrton & Perry's Patent Direct Reading Instruments.

LONG RANGE AMMETERS.

Always in stock. Scale extends over 250°. Increase of angular deflection directly proportional to increase of current. Calibrated for reading 4 to 20, 10 to 50, 15 to 75, 20 to 100 ampères.

Price,-----\$35.00

SPECIAL LONG RANGE AMMETERS.

MADE TO ORDER.

Price, .1 to .5, and .15 to .75, and .2 to 1 ampères,-----\$39.50
 " 40 to 200 ampères,---\$46.00 | 80 to 400 ampères,---\$55.00 | 120 to 600 ampères,--- 64.50

LONG RANGE VOLTMETERS.

ALWAYS IN STOCK.

Price, calibrated for readings of 15 to 75 Volts,-----\$44.00
 25 to 135 Volts, price,----- 46.00

LONG RANGE VOLTMETERS.

MADE TO ORDER.

To read from 40 to 200 volts,-----Price, \$52.50
 " " 100 " 500 "-----" 57.00
 " " 200 " 1,000 "-----" 64.50

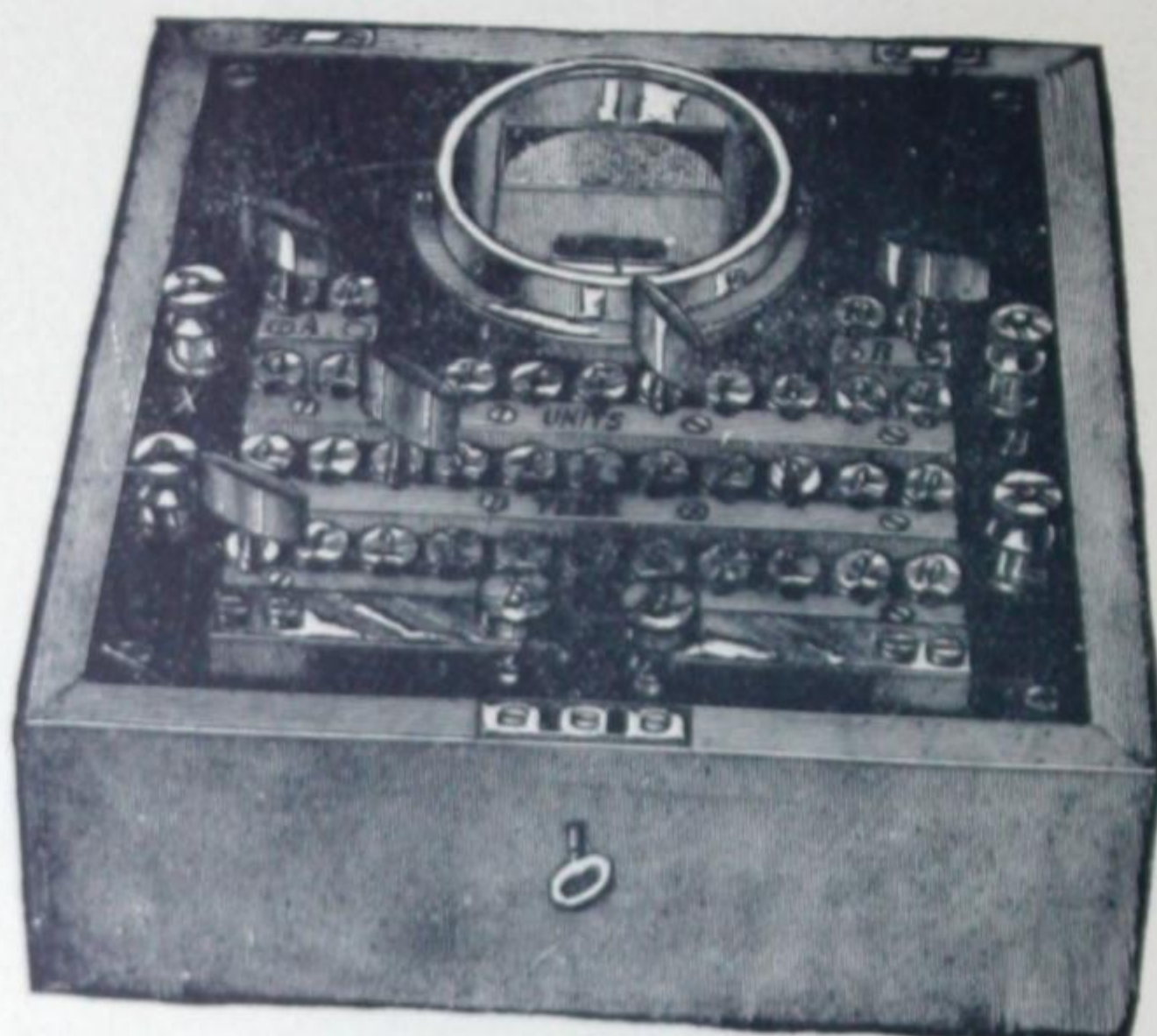
Long Range Ammeters or Voltmeters, calibrated for any other readings, at prices ranging from 10 to 20 per cent. extra.

In the old type of their permanent magnet and spring instruments the indicator pointed to a certain number of degrees on a scale, the electrical value of which had to be ascertained either by multiplying by some troublesome constant, such as 1.87, or by referring to a table of values. In all their new Direct Reading Instruments, throughout the whole range of the scale, the indicator points at once to the exact number of ampères, volts, etc., to be measured. No multiplier nor table of values is needed. No permanent magnet employed.

The Patentees' Certificate of Accuracy Accompanies Each Measuring Instrument.

Instruments for Electrical Measurement.

(CONTINUED.)



No. 1 Wheatstone Bridge Set.

WITH GALVANOMETER

No. 1, Complete (as shown in cut),	-----\$ 83.00
No. 2, as per description below,	-----100.00

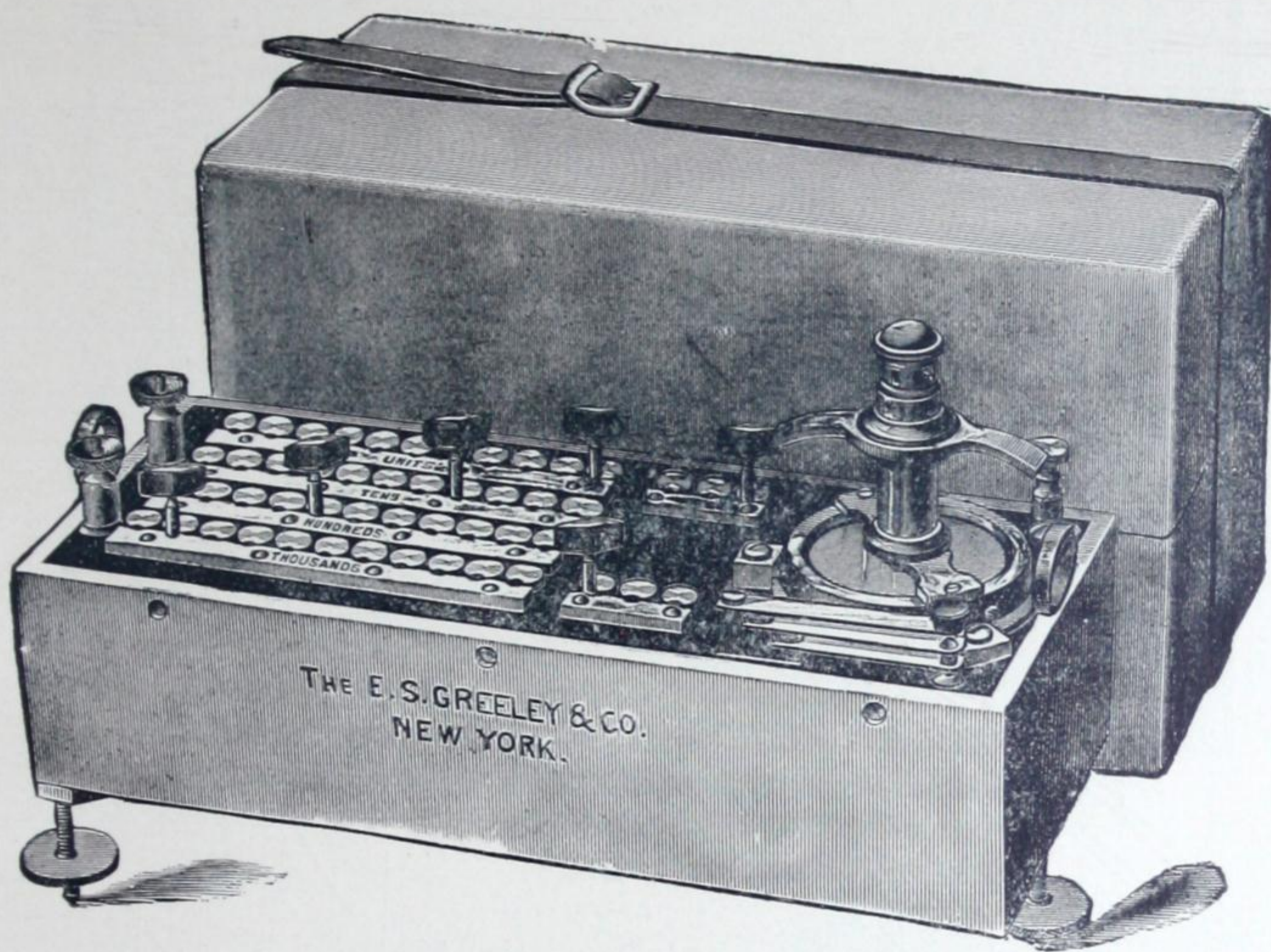
No. 2 is a complete and very portable form of apparatus for measuring resistances, consisting of a sensitive detector galvanometer, set of resistance coils with bridge coils and keys, all contained in a polished mahogany case.

The resistance coils are arranged in four rows of ten coils each, the rows being designated "Units," "Tens," "Hundreds" and "Thousands." There are 10, 100 and 1,000 ohm coils on each arm of the bridge, thus giving an extreme range of measurement from 1-100th to 1,111,000 ohms. The arrangement of the coils is such that six plugs only are needed in this set—one in each arm of the bridge, and one in each row of coils—making the reading the simplest possible. For example: If with $A=100$ and $B=10$, to obtain a balance it is necessary to plug 5 in the "Thousands," 0 in the "Hundreds," 7 in the "Tens" and 2 in the "Units" row, the resistance measured is equal to 507.2 ohms.

The galvanometer can be turned so that the needle can cover the zero line without turning the case. A needle lifter is provided so that when the set is not in use the centre pin will not be injured.

Instruments for Electrical Measurement.

(CONTINUED.)



No. 3 Wheatstone Bridge Set.

WITH FIBRE SUSPENDED NEEDLE AND REVOLVING GALVANOMETER MOUNTED IN A FINELY POLISHED PORTABLE CASE.

Price, -----\$120.00

The fibre suspension of the needle in this instrument secures extreme delicacy of action, the needle being strongly deflected through 1.1 megohms with five cells of Leclanché Battery.

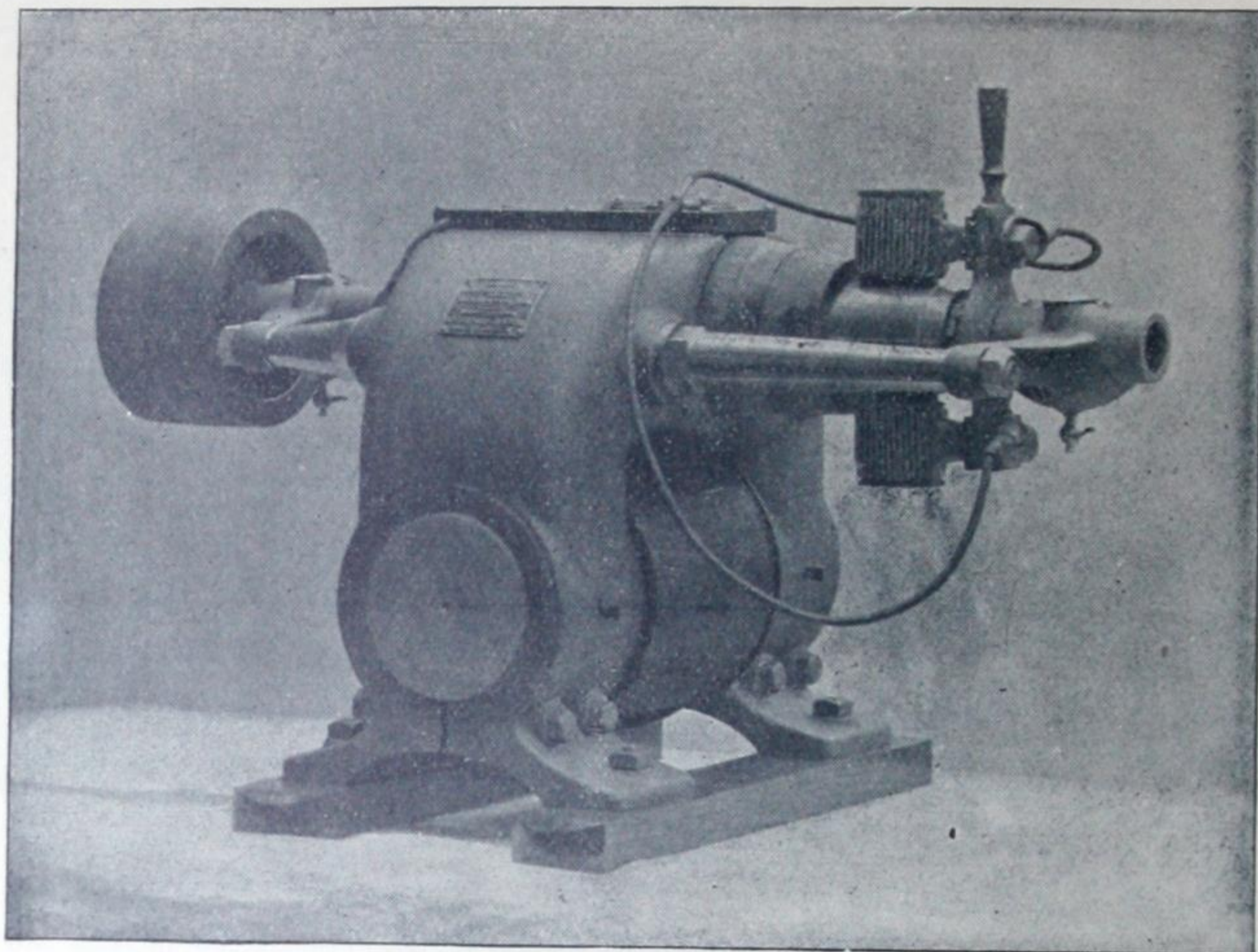
The act of closing the case releases the fibre from all tension, thus avoiding much of the risk of rupture in transportation.

The features of a revolving galvanometer and a variable and removable damping and directing magnet, conduces to rapid work and ease of manipulation.

The apparatus can be used without removing from the case when it is not essential to level it. When necessary it can be handily lifted out as shown in the cut and levelled up with the screws provided for that purpose.

The resistance coils are arranged in four rows of ten coils each, the rows being designated "Units," "Tens," "Hundreds" and "Thousands." There are 10, 100 and 1,000 ohm coils on each arm of the bridge, thus giving an extreme range of measurement from 1-100th to 1,111,000 ohms.

Jenney Electric Motors.



CONSTANT POTENTIAL MOTOR.—Form for $\frac{1}{8}$ to $7\frac{1}{2}$ Horse Power.

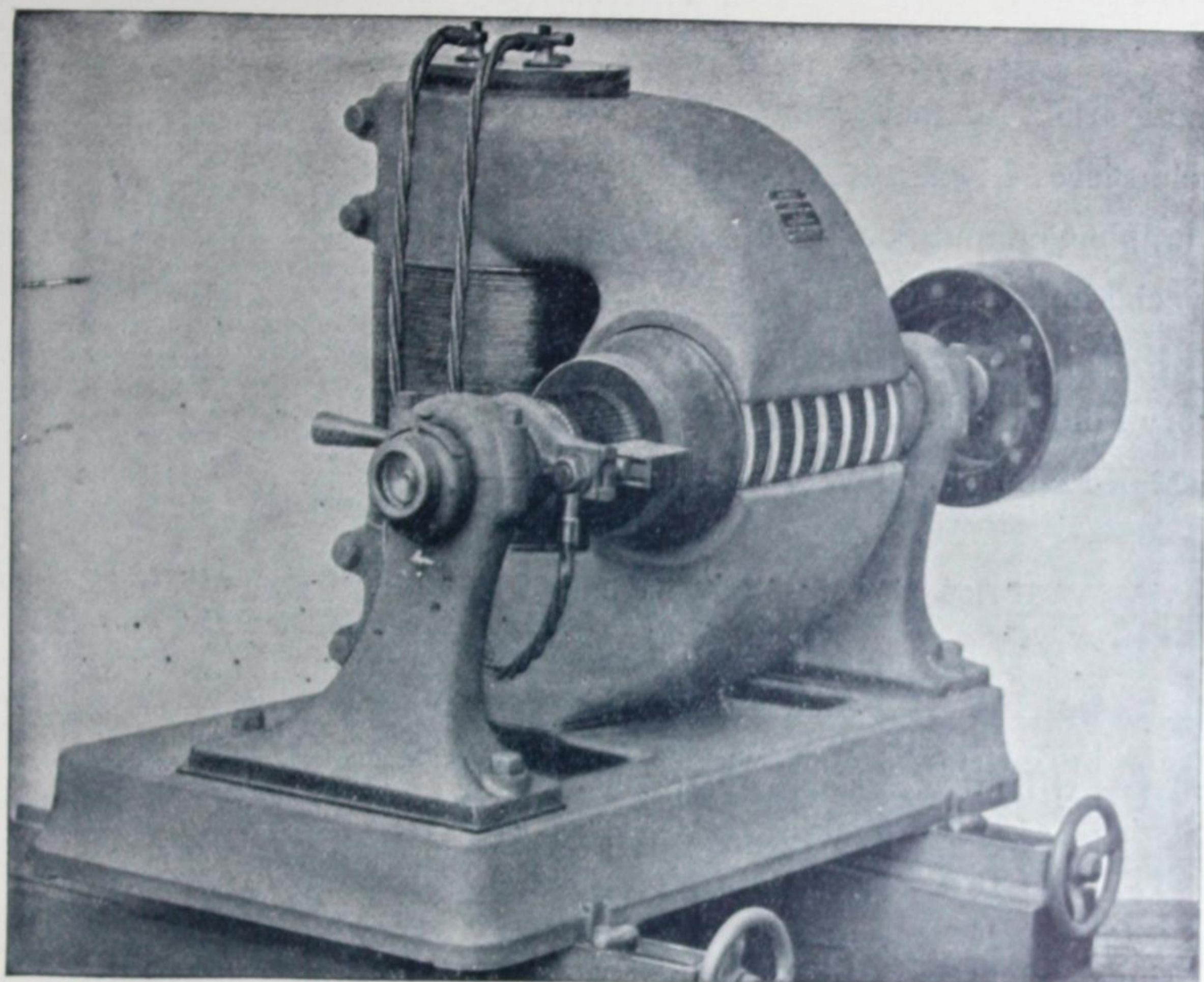
PRICE LIST

—OF—

Jenney Constant Potential Motors.

HORSE POWER.	110 VOLTS.	220 VOLTS.	500 VOLTS.
$\frac{1}{8}$ —(No Rheostat).....	\$ 40.00	\$ 40.00	\$ 50.00
$\frac{1}{4}$ — “ “	70.00	90.00	110.00
$\frac{1}{2}$ — “ “	140.00	140.00	160.00
1 —(With “	210 00	210.00	230.00
2 — “ “	300.00	300.00	320.00
3 — “ “	400.00	400.00	420.00
5 — “ “	550.00	550.00	550.00
$7\frac{1}{2}$ — “ “	700.00	700.00	700.00
10 — “ “	825.00	825.00	825.00
15 — “ “	1,075.00	1,075.00	1,075.00
20 — “ “	1,300.00	1,300.00	1,300.00
35 — “ “	1,950.00	1,950.00	1,950.00
50 — “ “	2,600.00	2,600.00	2,600.00

Jenney Electric Motors.



10 HORSE POWER CONSTANT POTENTIAL MOTOR-DYNAMO.

CLASSIFICATION.

HORSE POWER.	HEIGHT IN INCHES.	FLOOR SPACE.		PULLEY.		BELT WIDTH.	NET WEIGHT.	APPROXIMATE SPEED.
				DIAM.	FACE.			
$\frac{1}{8}$	8	7	x 10	2	$\frac{1}{2}$	$\frac{1}{4}$ rd.	28	3100
$\frac{1}{4}$	10	8	x 11	$2\frac{1}{2}$	1	$\frac{3}{4}$	70	2900
$\frac{1}{2}$	12	9	x 13	3	$1\frac{1}{2}$	1	110	2700
1	$15\frac{1}{2}$	10	x 15	4	2	$1\frac{1}{2}$	180	2500
2	18	$10\frac{3}{4}$	x 18	5	$2\frac{1}{2}$	2	306	2300
3	19	12	x 20	6	3	$2\frac{1}{2}$	414	2000
5	20	$13\frac{1}{2}$	x 22	8	4	3	612	1800
$7\frac{1}{2}$	22	15	x 24	$8\frac{1}{2}$	5	4	846	1600
10	$25\frac{1}{2}$	21	x 41	9	6	5	1285	1500
15	29	$23\frac{1}{2}$	x 45	10	7	6	1850	1400
20	$31\frac{1}{2}$	$25\frac{1}{2}$	x 50	11	8	7	2716	1300
35	36	29	x 56	13	10	9	3300	1200
50	40	33	x 62	15	12	11	5420	1100

Speed of Motor is stamped on name plate, but it will vary a little on different circuits. Do not put driven pulley on countershaft till speed of Motor is known.

Special Features of the Jenney Motors and Dynamos.

Single Field Magnetic, Short Magnetic circuit.

Pole Pieces **Clamped** to Core. Low centre of Gravity.

Durable Commutator of Pure "Tempered" Copper.

Special improved brush holders. Carbon Brushes.

Self-oiling bearings in all sizes. Armature carefully protected.

Very High Efficiency. Fine finish.

Best of Material and Workmanship.

Price List of Jenney Constant Potential Dynamos.

FOR 110 VOLT LAMPS.

KILO, WATTS.	AMPERES AT 125 VOLTS.	CAPACITY IN 3.6 WATT LAMPS.	WEIGHT.	APPROXIMATE SPEED.	LIST.
1	8	15	180	2,500	\$ 231.00
2	16	30	306	2,200	330.00
3	24	40	414	2,000	440.00
5	40	65	612	1,800	625.00
7½	60	100	846	1,600	770.00
10	80	150	1,285	1,500	866.00
15	120	200	1,850	1,400	1,129.00
20	160	300	2,710	1,300	1,365.00
30	240	400	3,300	1,200	2,047.00
40	320	900	5,420	1,100	2,730.00
50	400	1,100	6,775	1,000	3,412.00
62½	500	1,400	8,475	900	4,265.00
80	640	1,800	10,840	800	5,460.00

PRICES SUBJECT TO DISCOUNT.

POWER GENERATORS

Wound for 220 and 500 Volts furnished on short notice.

Battery Material.



— THE — "Gonda" Prison Battery.

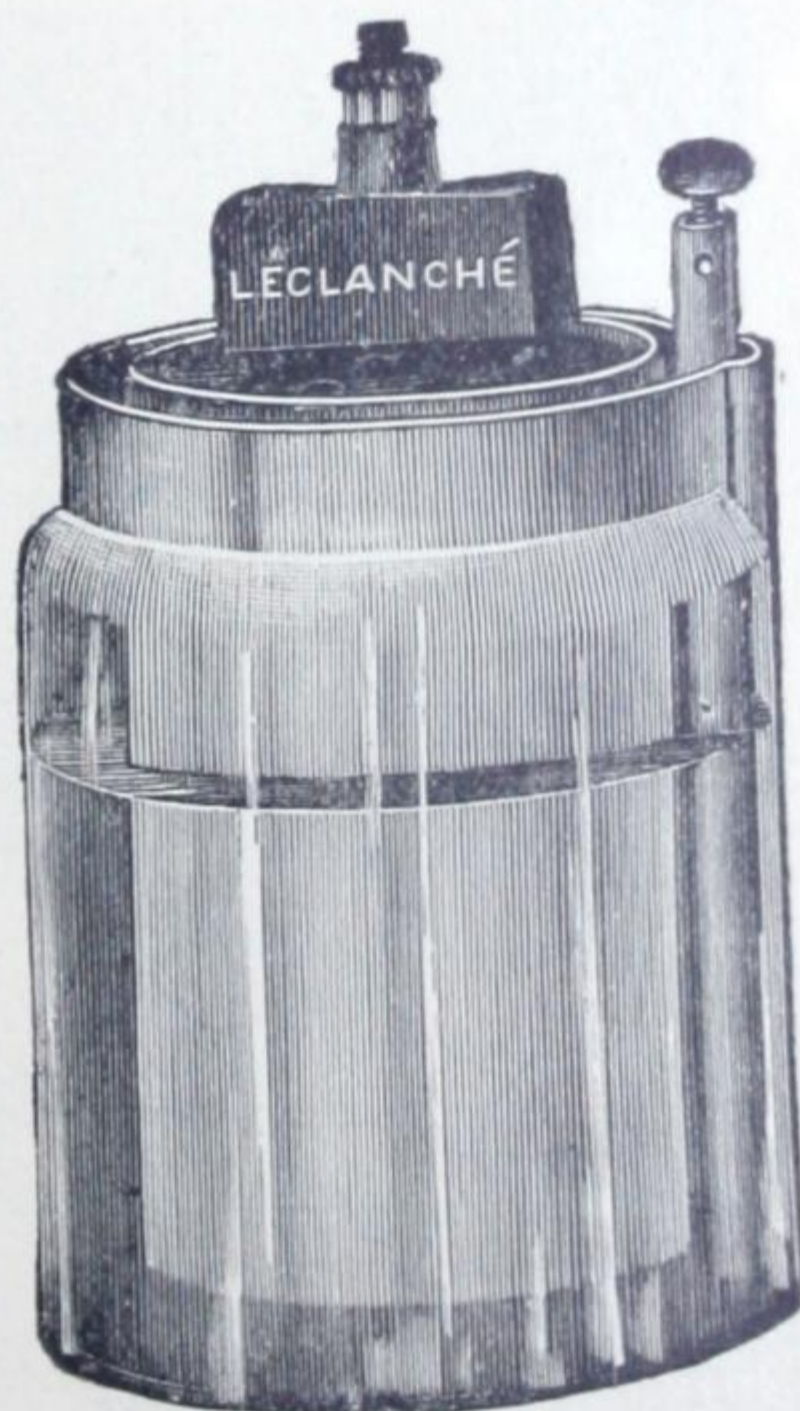
PRICE LIST.

Cell Complete, -----	\$1.00
Gondas, per pair, with Rubber Bands, -----	.60
Carbon Mounted, Complete, -----	.15
Glass Jar, -----	.15
Glass Jar Cover, -----	.08
Zinc, -----	.08
Sal. Am. in Bag, -----	.08
Rubber Bands, per Pair, -----	.04

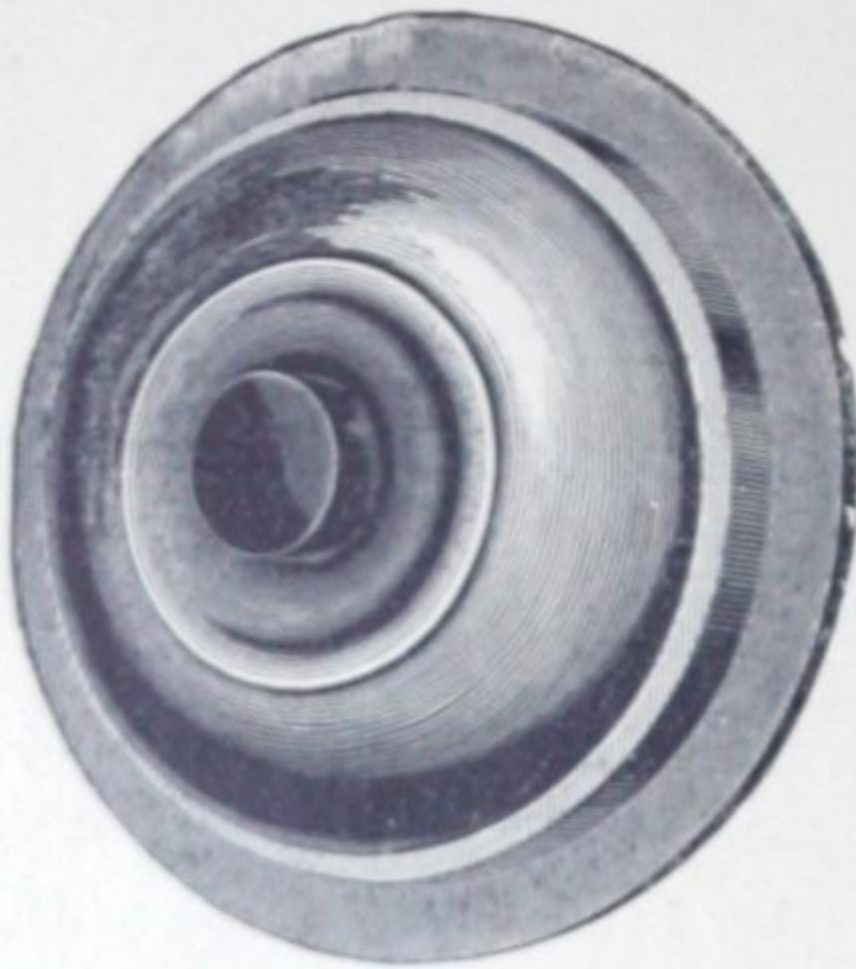
— THE — Leclanche' Disque Battery.

PRICE LIST.

Cell Complete, -----	\$0.75
Porous Cup alone, -----	.60
Glass Jar, -----	.15
Zinc, -----	.08
Sal. Am. in Bag, -----	.08
Complete Cell Hermetically Sealed, -----	1.00



Push-Buttons and Batteries.



Bronze Metal Push Button.

Nicely Finished and Polished.

SCREW COVER AND FIBRE BACK.

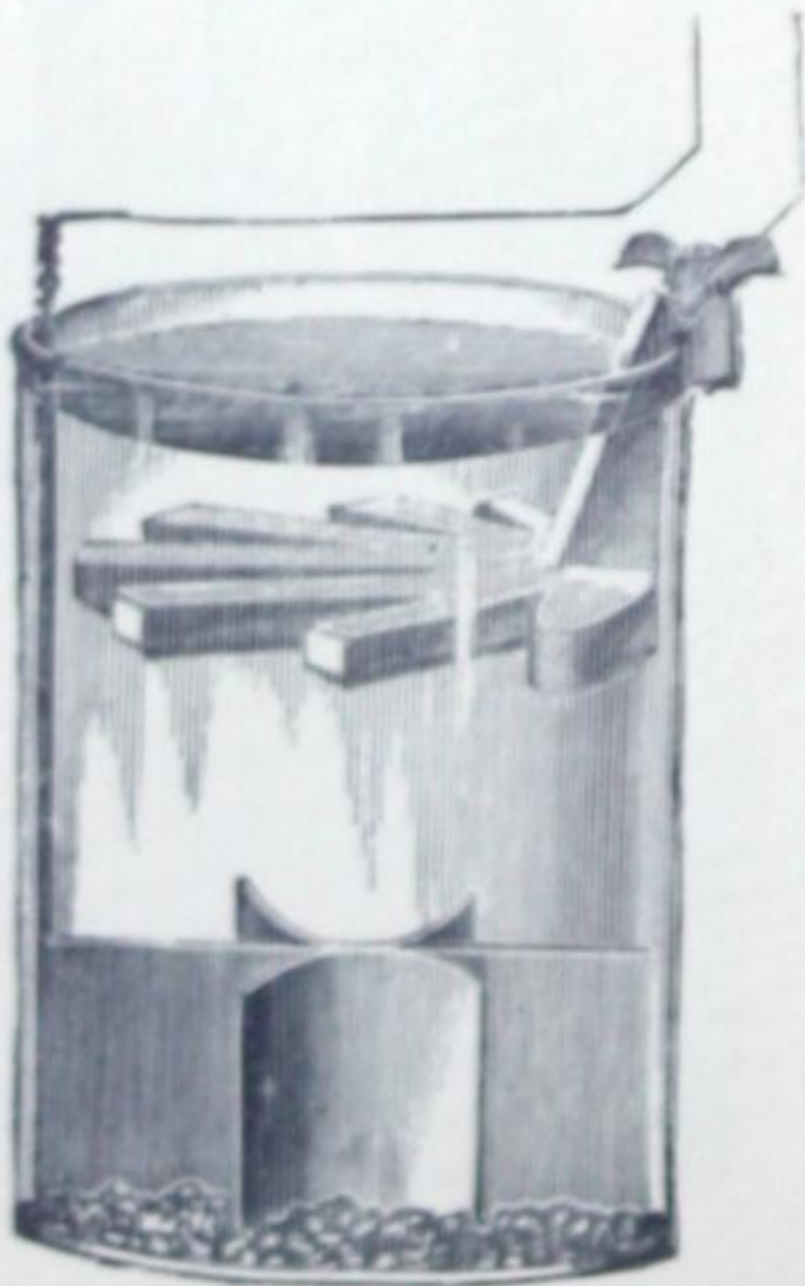
No. 7577.	Light or Dark Finish,	-----	\$.60
" 7578.	Oxydized Silver,	-----	.80

Wooden Push Buttons.

No. 7570.	Walnut,	-----	Each, \$.20
" 7571.	Oak or Ash,	-----	" .20
" 7572.	Cherry,	-----	" .20
" 7573.	Rosewood,	-----	" .25
" 7574.	Mahogany,	-----	" .25

Other Styles and Finishes in Metal and Wood to Order.

Crowfoot Gravity Battery,



LARGE REGULAR SIZE.

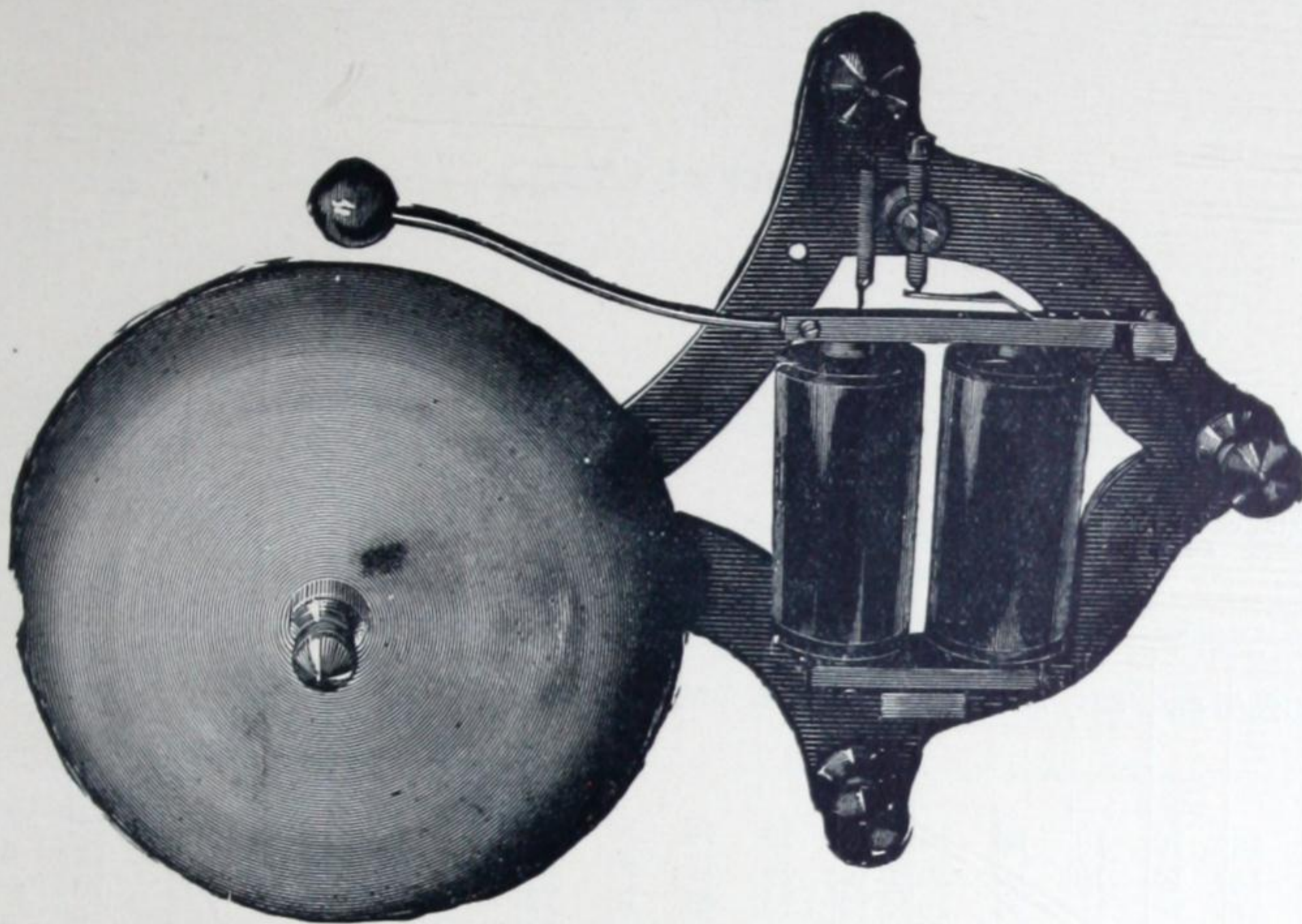
No. 7928.	Per Cell, Complete,	-----	Each, \$ 1.00
" 7929.	Zincs, 3 lbs., with Connection,	---	" .40
" 7930.	Coppers,	-----	" .24
" 7931.	Jars, 6 in. diameter, 8 in high,	---	" .32
" 7932.	Copper Connector, extra,	-----	" .10

SMALL SIZE.

No. 7933.	Per Cell, Complete, 5x7 size,	-----	Each, \$.80
" 7934.	Zincs, with Connection,	-----	" .33
" 7935.	Coppers,	-----	" .15
" 7936.	Jars,	-----	" .27

Electric Bells.

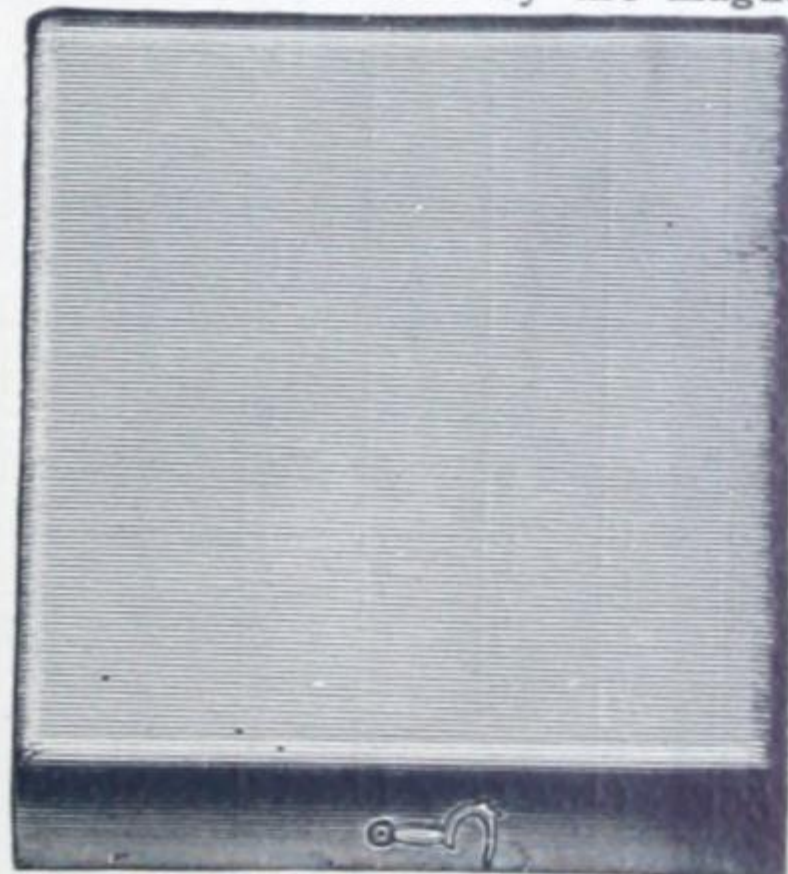
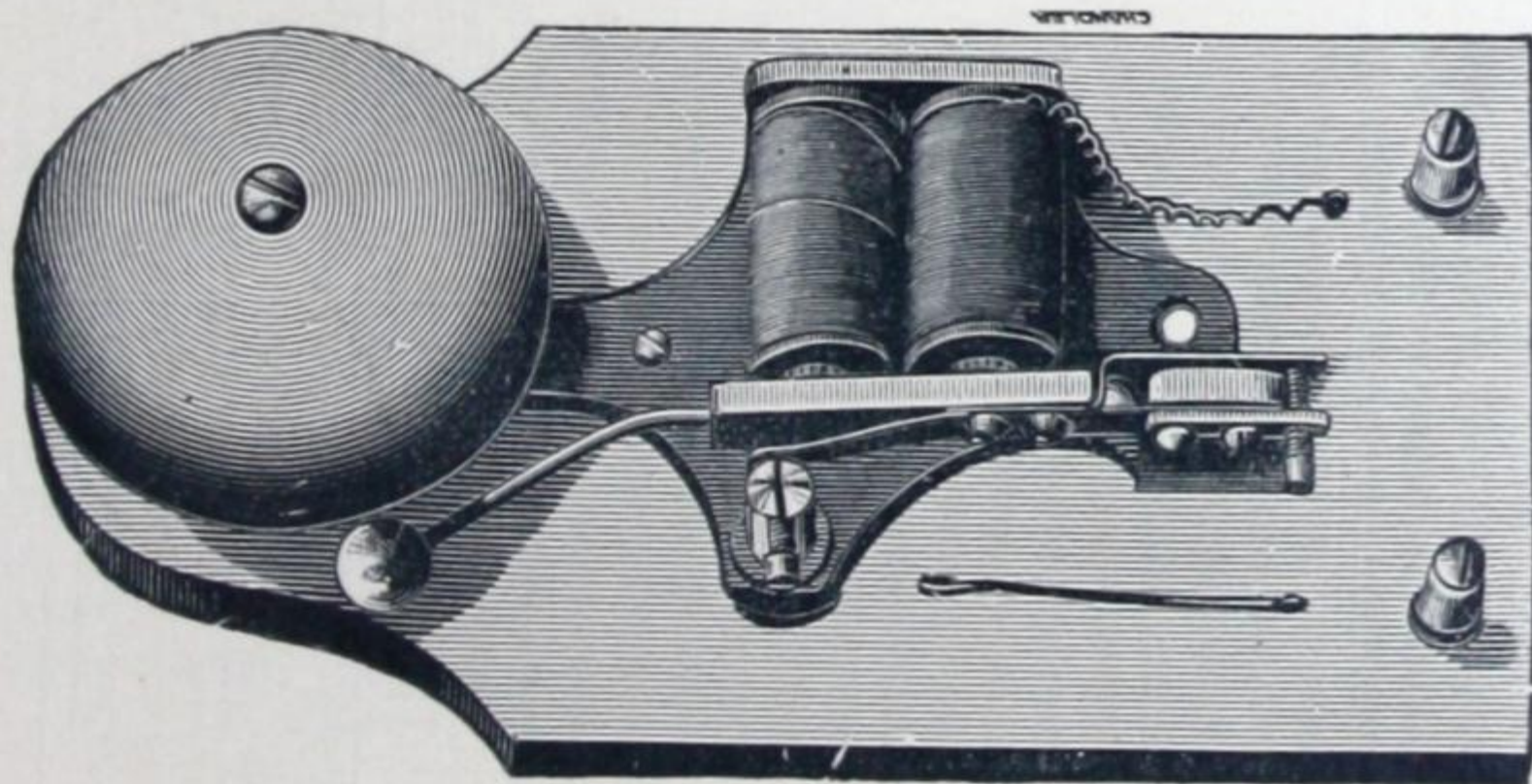
(Skeleton Form.)



Single Stroke or Vibrating.

Cat. No.		Price.	Cat. No.		Price.
7416.	4 Inch Gong,	\$3.50	7419.	7 Inch Gong,	\$5.75
7417.	5 " "	4.00	7420.	8 " "	7.00
7418.	6 " "	5.25		Lock Attachment,	Extra, 2.00

The Lock Attachment prevents any movement of the bell hammer till it is actuated by the magnets. Nickel-plated bell, japanned metal base.



THE COVER.

Special Trade Bell.

MOUNTED WITH NICKEL-PLATED GONGS, ENCASED IN FINELY FINISHED WOOD CASES, MAGNET WIRE OF THE BEST COTTON INSULATION.

The magnets and all working parts are mounted upon an iron bed-plate, thus preventing any displacement through shrinkage. These bells have a double adjustment regulation, which readily adapts the bell to the working of a strong or weak battery current.

Cat. No.		Price.	Cat. No.		Price.
7370.	2½ Inch Gong,	\$1.12	7375.	6 Inch Gong,	\$3.50
7371.	3 " "	1.25	7376.	7 " "	4.50
7372.	3½ " "	1.50	7377.	8 " "	6.00
7373.	4 " "	2.00	7378.	9 " "	7.50
7374.	5 " "	2.75			

Wiring Table for 50 Volts, 16 Candle Power Lamps.

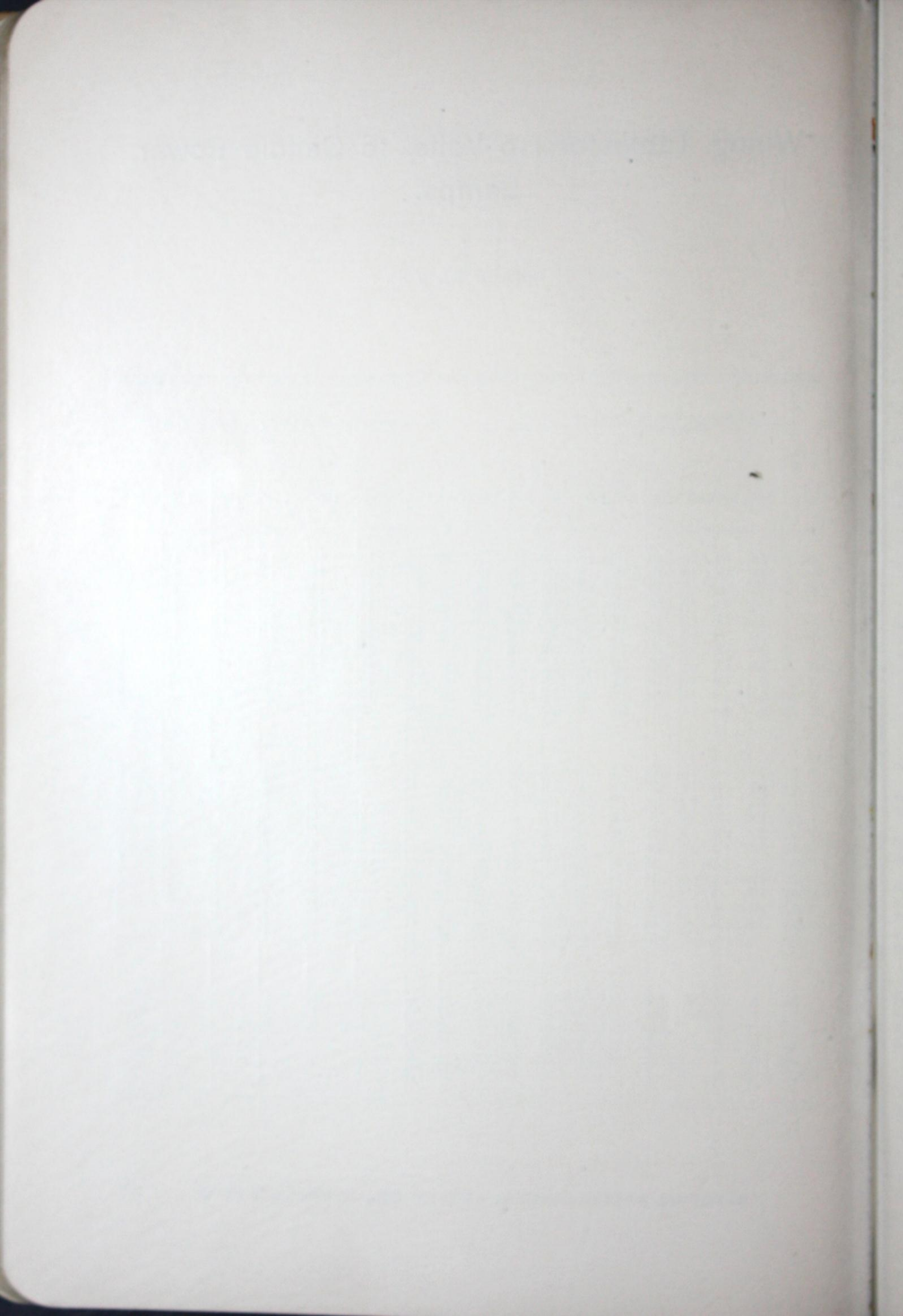
Loss of 1 Volt.

No. of Lamps.....	Distance in Feet to Center of Distribution.																
	20'	25'	30'	35'	40'	45'	50'	60'	70'	80'	90'	100'	120'	140'	160'	180'	200'
1	16	16	16	16	16	16	16	16	16	16	16	16	16	15	14	14	13
2	16	16	16	16	16	16	16	16	15	15	14	13	13	12	12	11	10
3	16	16	16	16	16	15	15	14	13	13	12	12	11	10	10	9	9
4	16	16	16	15	15	14	13	13	12	11	11	10	10	9	8	8	7
5	16	16	15	14	13	13	13	12	11	11	10	10	9	8	8	7	7
6	16	15	14	13	13	12	12	11	11	10	10	9	8	8	7	6	6
7	15	14	13	13	12	12	11	11	10	9	9	8	8	7	6	5	5
8	15	14	13	12	12	11	11	10	9	9	8	8	7	6	5	4	4
9	14	13	12	12	11	11	10	9	9	8	8	7	6	6	5	4	4
10	14	13	12	11	11	10	10	9	8	8	7	7	6	5	5	4	4
12	13	12	11	11	10	10	9	8	8	7	7	6	5	5	4	4	3
14	12	11	10	10	9	9	8	7	7	6	6	5	4	4	3	3	2
16	12	11	10	9	9	8	8	7	6	6	5	5	4	3	3	2	2
18	11	10	9	8	8	7	7	6	6	5	5	4	3	3	2	2	1
20	11	10	9	8	8	7	6	6	5	5	4	4	3	2	2	1	1
25	10	9	8	7	7	6	5	5	4	4	3	3	2	1	1	0	0
30	9	8	7	7	6	5	5	4	3	3	2	2	1	0	0	0	00
35	8	7	7	6	5	5	4	4	3	2	2	1	1	0	00	00	000
40	8	7	6	5	5	4	4	3	2	2	1	1	0	00	000	000	000
45	7	6	5	5	4	4	3	2	2	1	1	0	00	000	000	000	0000
50	6	6	5	4	4	3	3	2	1	1	0	0	00	000	000	0000	0000
55	6	5	5	4	3	3	2	2	1	0	0	00	00	000	0000	0000	0000
60	5	5	4	4	3	3	2	1	0	0	00	00	000	000	0000	-----	-----
65	5	5	4	3	3	2	2	1	0	0	00	00	000	0000	0000	-----	-----
70	4	4	4	3	2	2	1	1	0	00	00	000	000	0000	0000	-----	-----
75	4	4	3	3	2	1	1	0	00	00	000	000	0000	0000	-----	-----	-----
80	3	3	3	2	2	1	1	0	00	00	000	000	0000	0000	-----	-----	-----
90	3	3	2	2	1	1	0	00	00	000	000	000	0000	0000	-----	-----	-----
100	2	2	2	1	1	0	0	00	000	000	0000	0000	0000	-----	-----	-----	-----

Wiring Table for 110 Volts, 16 Candle Power Lamps.

Loss of $2\frac{2}{10}$ Volt.

No. of Lamps	Distance in Feet to Center of Distribution.																
	20'	25'	30'	35'	40'	45'	50'	60'	70'	80'	90'	100'	120'	140'	160'	180'	200'
1	19	19	19	19	19	19	19	19	19	19	19	19	19	18	17	17	16
2	19	19	19	19	19	19	19	19	18	18	17	16	16	15	15	14	13
3	19	19	19	19	19	18	18	17	16	16	15	15	14	13	13	12	12
4	19	19	19	18	18	17	16	16	15	14	14	13	13	12	11	11	10
5	19	19	18	17	16	16	16	15	14	14	13	13	12	11	11	10	10
6	19	18	17	16	16	15	15	14	14	13	13	12	11	11	10	10	9
7	18	17	16	16	15	15	14	14	13	12	12	11	11	10	9	9	8
8	18	17	16	15	15	14	14	13	12	12	11	11	10	9	9	8	8
9	17	16	15	15	14	14	13	12	12	11	11	10	9	9	8	8	7
10	17	16	15	14	14	13	13	12	11	11	10	10	9	8	8	7	7
12	16	15	14	14	13	13	12	11	11	10	10	9	8	8	7	7	6
14	15	14	13	13	12	12	11	10	10	9	9	8	7	7	6	6	5
16	15	14	13	12	12	11	11	10	9	9	8	8	7	6	6	5	5
18	14	13	12	11	11	10	10	9	9	8	8	7	6	6	5	5	4
20	14	13	12	11	11	10	10	9	8	8	7	7	6	5	5	4	4
25	13	12	11	10	10	9	9	8	7	7	6	6	5	4	4	3	3
30	12	11	10	10	9	8	8	7	6	6	5	5	4	3	3	2	2
35	11	10	10	9	8	8	7	7	6	5	5	4	4	3	2	2	1
40	11	10	9	8	8	7	7	6	5	5	4	4	3	2	1	1	1
45	10	9	8	8	7	7	6	5	5	4	4	3	2	2	1	1	0
50	9	9	8	7	7	6	6	5	5	4	3	3	2	1	1	0	0
55	9	8	8	7	6	6	5	5	4	3	3	2	2	1	0	0	0
60	8	8	7	7	6	6	5	4	3	3	2	2	1	1	0	---	---
65	8	8	7	6	6	5	5	4	3	3	2	2	1	0	0	---	---
70	7	7	7	6	5	5	4	4	3	2	2	1	1	0	0	---	---
75	7	7	6	6	5	4	4	3	2	2	1	1	0	0	---	---	---
80	6	6	6	5	5	4	4	3	2	2	1	1	0	0	---	---	---
90	6	6	5	5	4	4	3	2	2	1	1	0	0	---	---	---	---
100	5	5	5	4	4	3	3	2	1	1	0	0	---	---	---	---	---



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